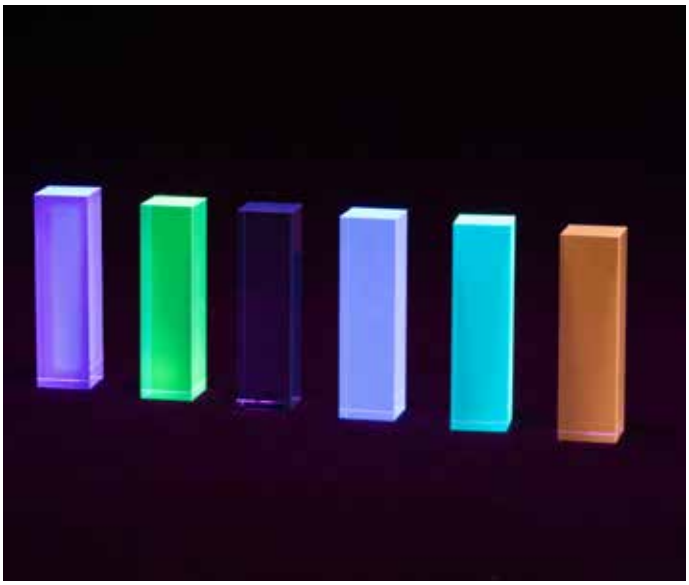
Spectrofluorometer Wavelength Validation & Performance Check

Starna 6BF Series Polymer Block References

Purpose

These materials may be used on a routine basis to calibrate, compare and monitor the performance of Fluorescence Spectrophotometers. p-Terphenyl, Ovalene, Tetraphenylbutadiene and Anthracene in PMMA are cited in USP chapter <853> for wavelength validation. .



Description and Discussion

Six polymer blocks containing seven fluorescent compounds whose spectra cover a broad spectral range with excitation range from 260 to 600nm and emission range from 370 to 630 nm. This wide spectral range enables the user to select a reference material with broadly similar spectral properties to those of the analyte, ensuring a reasonable spectral overlap and measurable signals without changing important parameters such as slit widths and wavelength settings.

REF NO	COMPOUND	APPROXIMATE MOLAR CONCENTRATION	PEAK EXCITATION WAVELENGTH (NM)	EXCITATION RANGE (NM)	PEAK EMISSION WAVELENGTH (NM)	EMISSION RANGE (NM)
1	Anthracene	1×10^{-5}	360	260 - 320	402	370 - 470
	Napthalene	6×10^{-5}	290	290 - 390	330	310 - 400
2	Ovalene	2×10^{-7}	342	300 - 460	482	450 - 570
3	p-Terphenyl	5×10^{-7}	295	270 - 350	338	310 - 410
4	Tetraphenylbutadiene	3×10^{-7}	348	290 - 390	422	370 - 540
5	Compound 610	1×10^{-6}	440	360 - 490	475	420 - 570
6	Rhodamine	2×10^{-7}	562	500 - 600	573	530 - 630

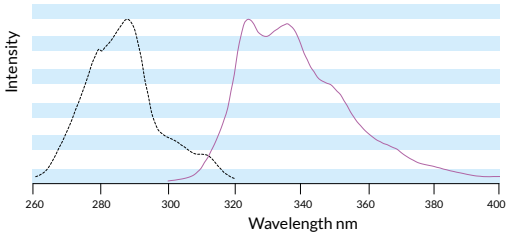
The solid polymethyl methacrylate (PMMA) matrix provides a stable environment for the fluorescent compounds. Being solids, there can be no evaporation of solvents, providing long term stability.

Spectrofluorometer Performance Validation

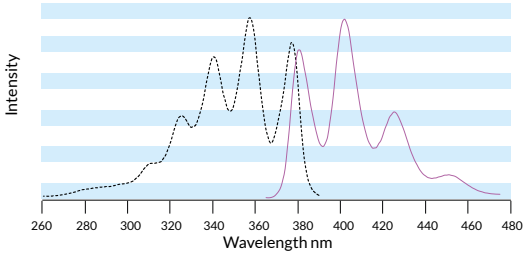
Polymer Block References

Typical excitation and emission spectra are shown below.

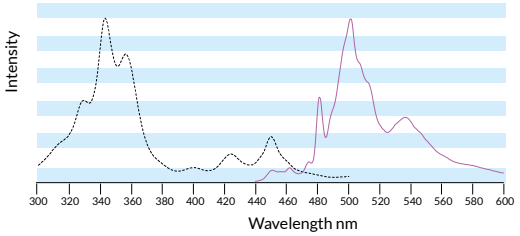
Starna Naphthalene Reference



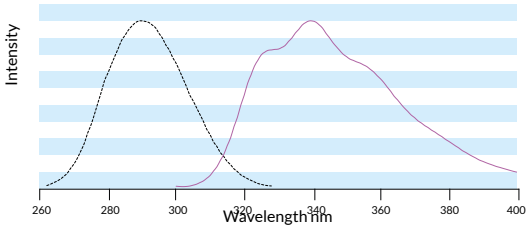
Starna Anthracene Reference



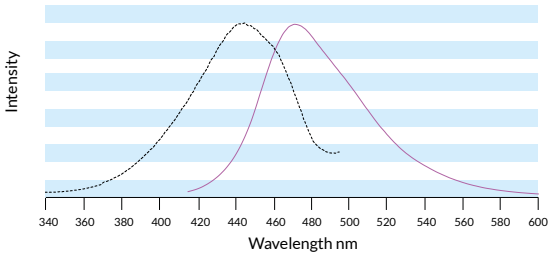
Starna Ovalene Reference



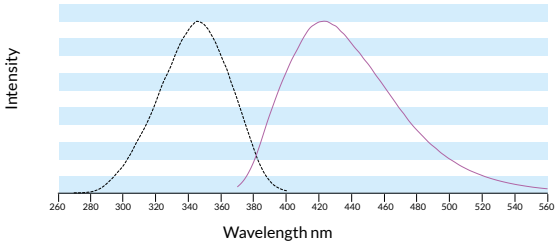
Starna p-Terphenyl Reference



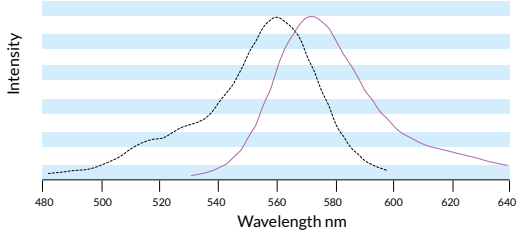
Starna Compound 610 Reference



Starna Tetraphenylbutadiene Reference



Starna Rohodamine B Reference



Spectrofluorometer Performance Validation

Polymer Block References

Certification and Documentation

STARNA warrants that all its Reference Materials have been produced in accordance with ISO17034. The ISO 17034 compliant certificate supplied states that the Reference Material has the required stability and homogeneity characteristics and is fit for its intended use

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.

How to Order

COMPOUND	CATALOGUE NUMBER
Set of 6 PMMA Fluorescence References	**6BF**
Napthalene/Anthracene	**6BF-STD/1**
Ovalene	**6BF-STD/2**
p-Terphenyl	**6BF-STD/3**
Tetraphenylbutadiene	**6BF-STD/4**
Compound 610	**6BF-STD/5**
Rhodamine B	**6BF-STD/6**

Note: these catalogue numbers relate to polymer blocks in standard rectangular cell format. For other formats please contact Starna at sales@starna.com

Starna scientific
'Setting the Standard'

www.starna.com
sales@starna.com
+ 44 (0) 20 8501 5550

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