Measurement of Spectralon Diffuse Fluorescence Standard (Blue) (Fluorescence Spectrum)

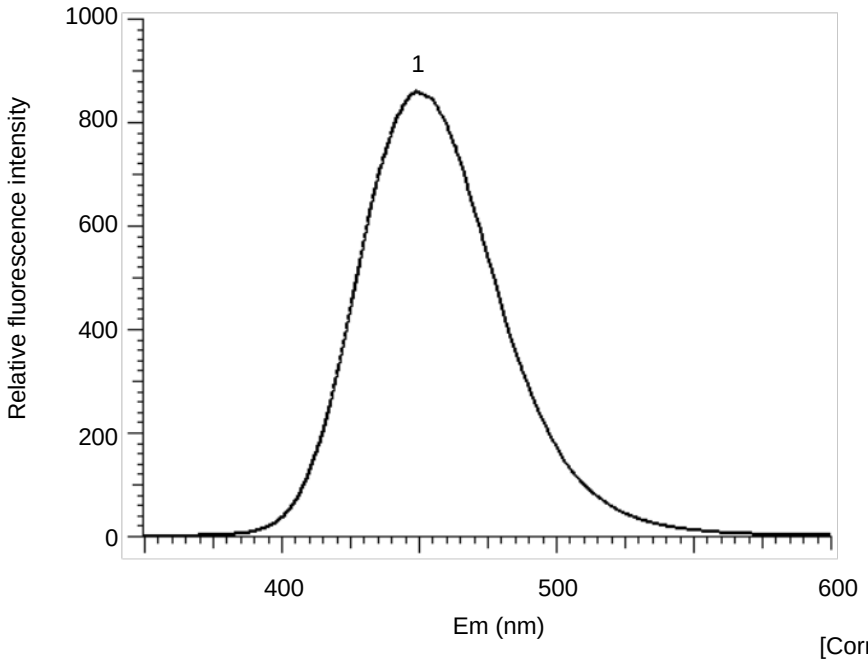
INTRODUCTION

Spectralon fluorescence standard is a fluorescence standard plate prepared by using Spectralon, a teflon-based diffuse reflectance material, as the base. As an inorganic fluorescent substance is used, it shows fluorescence properties stable for a long period of time. It can be used to confirm spectral shapes or as the standard material for fluorescence intensity of a solid sample.

When using with a sample as a fluorescence standard to obtain the spectral shape or intensity ratio comparing with other sample, spectral correction, which corrects for the wavelength properties characteristic to the optical components of a fluorophotometer, is necessary . A spectrum of blue fluorescence having a peak at around 450 nm was observed. The standard installation of F-7000 includes the spectral correction function for the wavelengths of 200 - 600 nm. The correction up to the longer wavelength region (200 - 800 nm) can also be enabled by using an optional R928F photomultiplier (PN: 650-1246) and a substandard light source (PN: 5J0-0110).

SAMPLE	ACCESSORY
SAMPLE NAME : USFS-205 Labsphere, Inc. 	Solid Sample Holder (P/N : 650-0161)

INSTRUMENT CONDITIONS				PEAKS (nm)
INSTRUMENT	: F-7000	RESPONSE	: Auto	1 : 449
EX WAVELENGTH	: 340 nm	EM FILTER	: 350	
EX BANDPASS	: 5 nm	PHOTOMULTIPLIER	: R3788	
EM BANDPASS	: 5 nm	PHOTOMULTIPLIER VOL.	: 250 V	
SCAN SPEED	: 240 nm/min			



[Corrected spectrum]

KEY WORDS
Material/Processing Material Related, Pigment/Paint/Dye, Glass/Ceramic, Spectralon Fluorescence Standard, Blue, Fluorescence Spectrum, Spectralon Diffuse Fluorescence Standard, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL090022-01A

Measurement of Spectralon Diffuse Fluorescence Standard (Blue) (Excitation Spectrum)

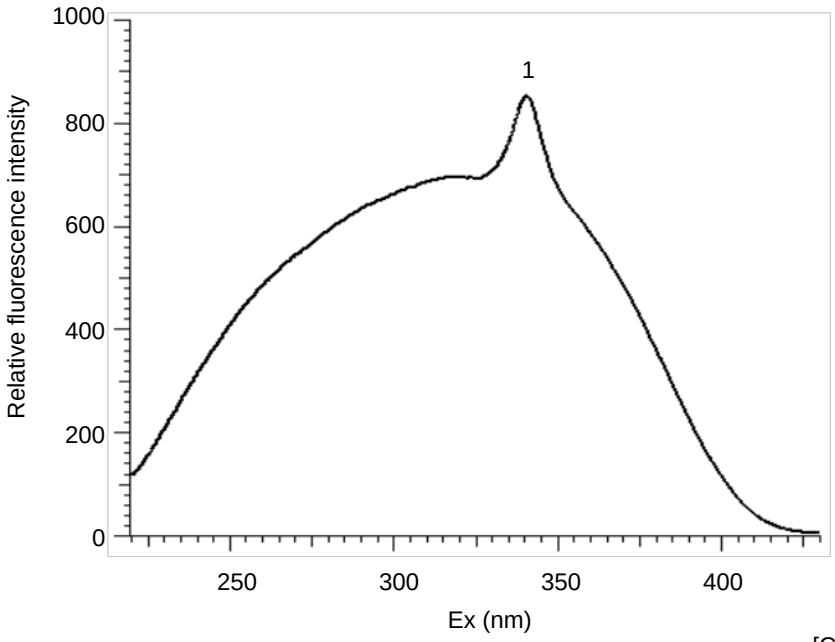
INTRODUCTION

Spectralon fluorescence standard is a fluorescence standard plate prepared by using Spectralon, a teflon-based diffuse reflectance material, as the base. As an inorganic fluorescent substance is used, it shows fluorescence properties stable for a long period of time. It can be used to confirm spectral shapes or as the standard material for fluorescence intensity of a solid sample.

The excitation spectrum of the Spectralon fluorescence standard (blue) was measured. A characteristic peak was found at around 340 nm.
The measured data was corrected by the spectral correction which allows the correction for the wavelength properties characteristic to the optical components of a fluorophotometer.

SAMPLE	ACCESSORY
SAMPLE NAME : USFS-205 Labsphere, Inc. 	Solid Sample Holder (P/N : 650-0161)

INSTRUMENT CONDITIONS				PEAKS (nm)
INSTRUMENT	: F-7000	RESPONSE	: Auto	1 : 340
EM WAVELENGTH	: 450 nm	EM FILTER	: 350	
EX BANDPASS	: 5 nm	PHOTOMULTIPLIER	: R3788	
EM BANDPASS	: 5 nm	PHOTOMULTIPLIER VOL.	: 250 V	
SCAN SPEED	: 240 nm/min			



[Corrected spectrum]

KEY WORDS
Material/Processing Material Related, Pigment/Paint/Dye, Glass/Ceramic, Spectralon Fluorescence Standard, Blue, Excitation Spectrum, Spectralon Diffuse Fluorescence Standard, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL090022-02A

Measurement of Spectralon Diffuse Fluorescence Standard (Blue) (Overlay spectrum)

INTRODUCTION

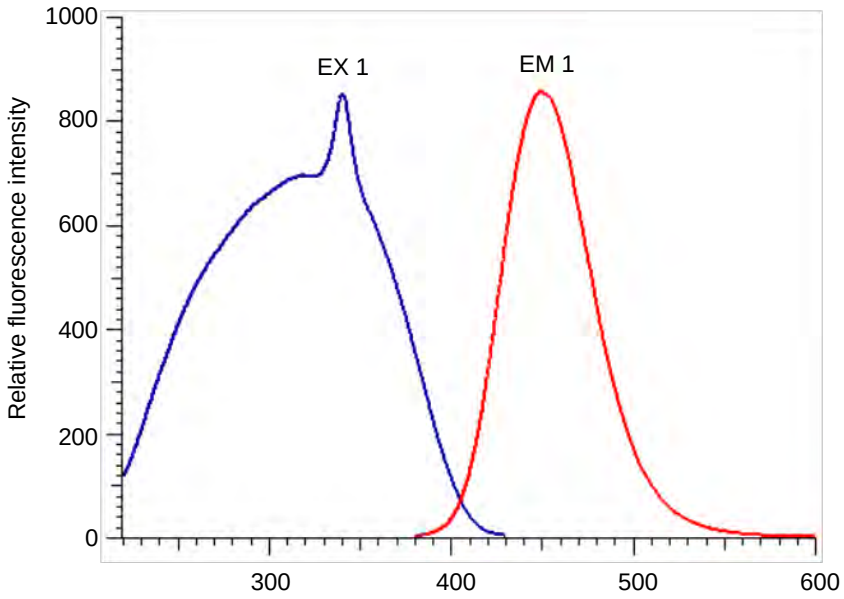
The overlay of the excitation and fluorescence spectra of the Spectralon fluorescence standard (blue) is shown.

F-7000 allows the spectral correction for each of the excitation and fluorescence spectra. The spectra corrected for the wavelength characteristics can be used to compare the spectral shapes and fluorescence intensities at different wavelength regions.

The standard installation of F-7000 includes the spectral correction function for the wavelengths of 200 - 600 nm. The correction up to the longer wavelength region (200 - 800 nm) can also be enabled by using an optional R928F photomultiplier (PN: 650-1246) and a substandard light source (PN: 5J0-0110).

SAMPLE	ACCESSORY
SAMPLE NAME : USFS-205 Labsphere, Inc. 	Solid Sample Holder (P/N : 650-0161)

INSTRUMENT CONDITIONS				PEAKS (nm)
INSTRUMENT	: F-7000	SCAN SPEED	: 240 nm/min	EX 1 : 340
EM WAVELENGTH	: 450 nm	RESPONSE	: Auto	EM 1 : 449
EX WAVELENGTH	: 340 nm	EM FILTER	: 350	
EX BANDPASS	: 5 nm	PHOTOMULTIPLIER	: R3788	
EM BANDPASS	: 5 nm	PHOTOMULTIPLIER VOL.	: 250 V	



[Corrected spectrum]

KEY WORDS
Material/Processing Material Related, Pigment/Paint/Dye, Glass/Ceramic, Spectralon Fluorescence Standard, Blue, Fluorescence Spectrum, Excitation Spectrm, Spectralon Diffuse Fluorescence Standard, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL090022-03A

Measurement of Spectralon Diffuse Fluorescence Standard (Blue) (3D Fluorescence Spectra)

INTRODUCTION

Spectralon fluorescence standard is a fluorescence standard plate prepared by using Spectralon, a teflon-based diffuse reflectance material, as the base. As an inorganic fluorescent substance is used, it shows fluorescence properties stable for a long period of time. It can be used to confirm spectral shapes or as the standard material for fluorescence intensity of a solid sample.

The 3D fluorescence spectrum was measured so as to analyze the excitation and fluorescence properties of the Spectralon fluorescence standard. By using F-7000, with the fastest scan speed for the instrument class, this analysis was completed within about 1.5 minutes.

SAMPLE

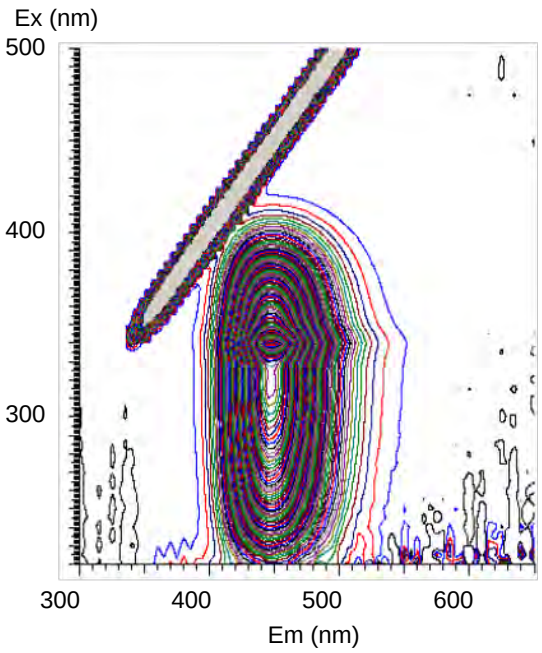
SAMPLE NAME : USFS-205 Labsphere, Inc.

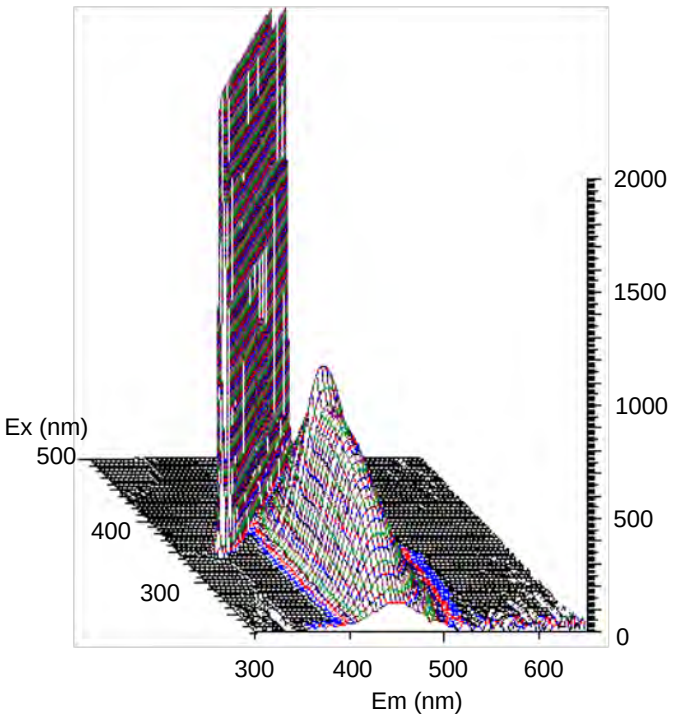
ACCESSORY

Solid Sample Holder
(P/N : 650-0161)

INSTRUMENT CONDITIONS

INSTRUMENT	: F-7000	RESPONSE	: Auto	FULLSCALE	: 2000
EX BANDPASS	: 5 nm	EM FILTER	: 350	DIVISION NUMBER	: 10
EM BANDPASS	: 5 nm	PHOTOMULTIPLIER	: R3788		
SCAN SPEED	: 60000 nm/min	PHOTOMULTIPLIER VOL.	: 250 V		





[Corrected spectrum]

KEY WORDS

Material/Processing Material Related, Pigment/Paint/Dye, Glass/Ceramic, Spectralon Fluorescence Standard, Blue, 3D Fluorescence Spectrum, 3D, Spectralon Diffuse Fluorescence Standard, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL090022-04A