

204.2 - Optical Properties

See also: [Table 204.1 - Molecular Absorption \(film, filter, solid, and solution forms\)](#)

SRM 936a has been discontinued. SRM 2943 Relative Intensity Correction Standard for Fluorescence Spectroscopy: Blue Emission can be used as an alternative for applications using a cuvette-type sample format. See Table 204.2 (below) for related materials.

SRMs 2011, 2013, 2015, 2017 and 2021 are now being supported by Calibration Service (Service No. 38060S). Click here for further information: <http://www.nist.gov/calibrations/>

Infrared Reflectance (solid form)

Optical Rotation (powder form) - SRM 17g is intended for calibrating or checking polarimetric apparatus. In aqueous solution, the optical rotation of SRM 17g is value assigned at four wavelengths.

Photography (chart form) - SRM 1010a is used to test the resolving power of cameras or of whole microcopying systems. It consists of 5 charts printed photographically on paper, that have 26 high-contrast, 5-line patterns ranging in spatial frequency of 1 mm⁻¹ to 18 mm⁻¹.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	Description	Unit Size
17g	Sucrose Optical Rotation	60 g
1010a	Microcopy Resolution Test Charts	set (5)
1928	Infrared Specular High Reflectance Standard (Nominal Diameter 51 mm)	disk
1929	Infrared Specular High Reflectance Standard (Nominal Diameter 25 mm)	disk
1932	Fluorescein Solution	3 x 2 mL
1934	Fluorescent Dyes for Quantitative Flow Cytometry (Visible Spectral Range)	4 ampoules x 1 each level
2241	Relative Intensity Correction Standard for Raman Spectroscopy: 785 nm Excitation	each
2242a	Relative Intensity Correction Standard for Raman Spectroscopy: 532 nm Excitation	each
2244	Relative Intensity Correction Standard for Raman Spectroscopy: 1064 nm Excitation	each
2246a	Relative Intensity Correction Standard for Raman Spectroscopy: 830 nm Excitation	each
2940a	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Orange Emission	solid glass cuvette
2941a	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Green Emission	solid glass cuvette
2942	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Ultraviolet Emission	each (12.5 x 12.5 x 45)mm
2943	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Blue Emission	each (12.5 x 12.5 x 45)mm
2944	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Red Emission	each (12.5 x 12.5 x 45)mm

204.2(1) - Fluorescence and Raman Spectroscopy

SRM	Description	Unit Size	Wavelength Range (nm)
1932	Fluorescein Solution	3 x 2 mL	488 to 491
1934	Fluorescent Dyes for Quantitative Flow Cytometry (Visible Spectral Range)	4 ampoules x 1 each level	405, 488 to 491, 532, 652
2241	Relative Intensity Correction Standard for Raman Spectroscopy: 785 nm Excitation	each	785
2242a	Relative Intensity Correction Standard for Raman Spectroscopy: 532 nm Excitation	each	532
2244	Relative Intensity Correction Standard for Raman Spectroscopy: 1064 nm Excitation	each	1064
2246a	Relative Intensity Correction Standard for Raman Spectroscopy: 830 nm Excitation	each	830
2940a	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Orange Emission	solid glass cuvette	500 to 800
2941a	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Green Emission	solid glass cuvette	450 to 650
2942	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Ultraviolet Emission	each (12.5 x 12.5 x 45)mm	320 to 430
2943	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Blue Emission	each (12.5 x 12.5 x 45)mm	350 to 640
2944	Relative Intensity Correction Standard for Fluorescence Spectroscopy: Red Emission	each (12.5 x 12.5 x 45)mm	530 to 830

204.2(3) - Optical Rotation (powder form)

Optical Rotation (powder form) - SRM 17g is intended for calibrating or checking polarimetric apparatus. In aqueous solution, the optical rotation of SRM 17g is value assigned at four wavelengths.

SRM	Description	Unit Size	Optical Rotation (in mrad) 3/4 Aqueous Solution Wavelength (100 mm cell)			
			546.2271 nm	589.4400 nm	632.9914 nm	882.60 nm
17g	Sucrose Optical Rotation	60 g	355.71	302.05	259.53	129.42

- Certified values are in normal font.

- Non-certified and reference values are italicized.

- Information values and values of potential interest are within parentheses.