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**INDUSTRY STANDARD OF THE
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**Verification Regulation of Fluorescence Spectrophotometer
(English Translation)**

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Fluorescence spectrophotometer verification procedure

1 Scope

This procedure applies to the first verification, subsequent verification and in-use inspection of the fluorescence spectrophotometer.

2 Overview

When some substances are excited by light, they emit light that is slightly longer than the wavelength of the light. This light is called fluorescing.

Light. The fluorescence intensity has the following relationship with the concentration of the substance.

$F = k' \Phi I_0 (1 - e^{-\epsilon L c})$ where. F ---fluorescence intensity;

k' ---instrument constant;

I_0 ---excitation light intensity;

ϵ ---the molar absorption coefficient of the fluorescent substance;

L ---the thickness of the liquid layer of the fluorescent substance;

c ---concentration of the fluorescent substance;

Φ ---fluorescence quantum efficiency.

For a given substance, when the wavelength and intensity of the excitation light are fixed, the thickness of the liquid layer is fixed, and the concentration of the solution is higher.

When low, the fluorescence intensity has a simple relationship with the concentration c of the fluorescent substance.

$$F = kc$$

Fluorescence spectrophotometer (hereinafter referred to as the instrument) is based on the above principle, to determine the substance that can emit fluorescence Analytical instrument for qualitative and quantitative measurement.

The instrument is mainly composed of a light source system, an excitation monochromator system, a sample chamber, a launch monochromator system, a detector system, and the data processing system is composed.

The monochromators of the instrument can be divided into two categories. Class A is a dispersive monochromator; Class B is a filter monochromator.

3 Metrological performance requirements

3.1 Wavelength indication error and repeatability

3.1.1 Class A monochromator wavelength indication error limits and wavelength repeatability shall meet the following requirements.

Wavelength indication error limit. better than $\pm 2.0\text{nm}$;

Wavelength repeatability. $\leq 1.0\text{ nm}$.

3.1.2 Class B Monochromator Filter Light Transmission Characteristics the nominal value of the glass filter and interference filter of the class B monochromator configuration shall meet the following requirements.

Glass filter. nominal value $\pm 10\text{ nm}$;