
**Ambient air — Determination of sulfur
dioxide — Ultraviolet fluorescence
method**

*Air ambiant — Dosage du dioxyde de soufre — Méthode par
fluorescence dans l'ultraviolet*



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Foreword

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Ambient air — Determination of sulfur dioxide — Ultraviolet fluorescence method

1 Scope

This International Standard describes an ultraviolet fluorescence method for sampling and determining sulfur dioxide (SO₂) concentrations in the ambient air using automatic analysers.

This International Standard is applicable to the determination of sulfur dioxide mass concentrations of a few micrograms per cubic metre to a few milligrams per cubic metre or, expressed in terms of volume fraction, from a few microlitres per cubic metre to a few millilitres per cubic metre.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4219, *Air quality — Determination of gaseous sulfur compounds in ambient air — Sampling equipment*

ISO 6142, *Gas analysis — Preparation of calibration gas mixtures — Gravimetric method*

ISO 6144, *Gas analysis — Preparation of calibration gas mixtures — Static volumetric method*

ISO 6145-1, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 1: Methods of calibration*

ISO 6145-4, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 4: Continuous syringe injection method*

ISO 6145-6, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 6: Critical orifices*

ISO 6349, *Gas analysis — Preparation of calibration gas mixtures — Permeation method*

ISO 6767, *Ambient air — Determination of the mass concentration of sulfur dioxide — Tetrachloromercurate (TCM)/parosaniline method*

ISO 9169, *Air quality — Definition and determination of performance characteristics of an automatic measuring system*

3 Principle of analysis

The UV fluorescence method is not an absolute measurement method. Therefore, the instrument shall be calibrated regularly, using calibration gas diluted with air whose O₂ and N₂ content is close to normal atmospheric concentrations. It is also sensitive to pressure and temperature. This measurement technique is subject to less chemical interference than other techniques available at present (see Annex A). However, the