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General rules for atomic absorption spectrometry

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Analytical Instruments Manufacturers Association (JAIMA)/ Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS K 0121** : 1993 is replaced with this Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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In the event of any doubts arising as to the contents, the original JIS is to be the final authority.

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Contents

General rules for atomic absorption spectrometry

1 Scope This Japanese Industrial Standard specifies general rules for quantitative analysis using an atomic absorption spectrometric apparatus.

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS K 0050 *General rules for chemical analysis*

JIS K 0083 *Methods for determination of metals in flue gas*

JIS K 0101 *Testing methods for industrial water*

JIS K 0102 *Testing methods for industrial wastewater*

JIS K 0211 *Technical terms for analytical chemistry (General part)*

JIS K 0212 *Technical terms for analytical chemistry (optical part)*

JIS K 0215 *Technical terms for analytical chemistry (analytical instrument part)*

JIS K 0222 *Methods for determination of mercury in stack gas*

JIS K 0557 *Water used for industrial water and wastewater analysis*

3 Terms and definitions For the purposes of this Standard, the definitions given in **JIS K 0050**, **JIS K 0211**, **JIS K 0212** and **JIS K 0215**, and the following definitions apply.

a) **atomic absorption spectrometry** a method using the atomic absorption spectrometric apparatus to determine the concentration of an analyte element by converting it in a sample to an atom in ground state by means of flame, electric heating or chemical reaction, and by measuring the absorbance of its atomic vapour layer

b) **flame atomic absorption spectrometry** an atomic absorption spectrometry using flame

c) **deuterium lamp** a hydrogen discharge lamp filled with deuterium

Since it emits intensive continuous spectrum all over the area of an ultraviolet region, it is used as a light source for a background correction

d) **low-pressure mercury lamp** a mercury discharge lamp of at most 133 Pa in pressure of mercury vapour

Since it emits intensively a resonance line of 253.7 nm, it is used as a light source for measurement of mercury

e) **electrothermal atomic absorption spectrometry** a method of atomic absorption spectrometry by drying, incinerating and atomizing the sample solution in a furnace electrically heated of which heating elements are graphite or heat resistant metal