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**Methods for determination of
ammonia in flue gas**

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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 Environmental Measurement and Chemical Analysis Association (JEMCA)/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 0099 : 1998** is replaced with this Standard.

In this time, the format has been looked over and the revision has been carried out.

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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Methods for determination of ammonia in flue gas

1 Scope This Japanese Industrial Standard specifies the methods for determination of ammonia in flue gas.

Remarks : In this Standard, flue gas means ones which are generated by being accompanied with combustion, chemical reaction, denitration process, metal surface treatment process, etc., and exhausted out to flue, chimney, or duct, etc. (hereafter referred to as "duct").

2 Normative references Standards listed in Attached Table 1 contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including amendments) shall be applied.

3 Common matters The common matters concerned with chemical analysis, sampling method of flue gas, molecular absorption spectrophotometry and ion chromatography shall be in accordance with JIS K 0050, JIS K 0095, JIS K 0115 and JIS K 0127 respectively.

4 Classification of analytical methods and their outlines Classification of analytical methods and their outlines shall be in accordance with Table 1.

Table 1 Classification of analytical methods and their outlines

Classification of analytical methods	Outlines of analytical method			Applicable condition
	Summary	Sampling	Range of determination volppm (mg/m ³)	
Indophenol blue absorption spectrophotometry	After absorbing ammonia in flue gas into boric acid solution, add sodium phenolpentacyanonitrosylferrate (III) solution and sodium hypochlorite solution. Indophenol blue is generated, measure its absorbance (640 nm).	Absorption bottle method Absorption solution: boric acid solution (5 g/L) Solution volume: 50 ml × 2 bottles Standard sampling volume: 20 L	1.6 to 15.5 (1.2 to 11.8)	according to 7.1.1.
Ion chromatography	After absorbing ammonia in flue gas into boric acid solution, introduce it into the ion chromatograph and obtain the chromatogram of ammonium ion.	Absorption bottle method Absorption solution: boric acid solution (5 g/L) Solution volume: 25 ml ⁽¹⁾ × 2 bottles or 50 ml ⁽²⁾ × 2 bottles Standard sampling volume: 20 L	0.6 to 15.5 ⁽³⁾ (0.5 to 11.8) 6.2 to 310 ⁽⁴⁾ (4.7 to 236)	

Notes (1) Absorption solution volume when an absorption bottle of 100 ml in capacity is used.