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Methods for determination of pyridine in flue gas

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Descriptors : pyridine, exhaust gases, gas analysis, industrial air pollutants, industrial wastes, sampling methods, spectrophotometry, gas chromatography, determination of content

Reference number : **JIS K 0087 : 1998 (E)**

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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

Methods for determination of pyridine in flue gas

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

Remarks 1 In this Standard, flue gas means ones which are generated by being accompanied with the manufacturing process of various kinds of chemicals, combustion, other chemical reaction, production process dealt with pyridines and exhausted out to flue, chimney or duct.

2 The normative references to this Standard are shown in Attached Table 1.

2 Common items The common items concerned with chemical analysis, sampling method of flue gas, molecular absorptiometric analysis and gas chromatograph shall be in accordance with **JIS K 0050**, **JIS K 0095**, **JIS K 0115** and **JIS K 0114** respectively.

3 Classification of analytical methods and their outlines Classification of analytical methods and their outline shall be as follows.

Table 1 Classification of analytical methods and their outlines

Classification of analytical methods	Outline of analytical method			Application requirement
	Summary	Sampling	Range of determination volppm	
Diaminostilbene–disulfonic acid absorptiometry	After absorbing pyridine in flue gas into diluted sulfuric acid, add 4,4'-diaminostilbene-2, 2'-disulfonic acid solution and cyanogen bromide solution to colour development. Measure its absorbance at 490 nm in wavelength and determine the pyridine.	Absorption bottle method Absorbent : 0.01 mol/*l* Sulfuric acid solution 20 ml×2	0.1 to [For 20 *l* of sample gas (1)]	According to **5.1.1**
Gas chromatography	Absorb pyridine in flue gas which was collected in a collection bottle into sulfuric acid solution. After extracting it in carbon disulphide, determine the pyridine by the chromatogram obtained with gas chromatograph provided with a hydrogen flame ionization detector.	Vacuum flask method Absorbent : 0.01 mol/*l* Sulfuric acid solution 50 ml	0.6 to [For 1 *l* of sample gas(2)]	

Notes (1) It is the case of the sample solution in which 10 *l* to 20 *l* of sample gas is collected and the absorbent is diluted to 200 ml.

(2) It is the case of the sample solution in which 1 *l* of sample gas is collect-