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Methods for determination of mercaptan in flue gas

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industrial wastes, sampling methods, spectrophotometry, gas
chromatography, determination of content

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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:

Date of Establishment: 1975-08-01

Date of Revision: 1998-03-20

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Methods for determination of mercaptan in flue gas

1 Scope This Japanese Industrial Standard specifies methods for determination of mercaptan (thiol) in flue gas.

Remarks 1 In this Standard, flue gas means ones which are generated by being accompanied with chemical reaction, etc. 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 chromatographic analysis 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 outlines 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 vol ppm	
Dimethyl-phenylene diamine absorptiometry	After absorbing mercaptan in sample gas into the absorption solution, add mixture of N,N-dimethyl- <i>p</i> -phenylenediamine and iron (III) chloride, develop the colour and measure the absorbance (505 nm).	Absorption bottle method Absorption solution: mercury (II) acetate solution Volume : 20 ml × 2	For 10 l of sampling volume : 0.5 to 10 For 100 l of sampling volume : 0.05 to 0.5	In accordance with 5.1.1.
Gas chromatography	Collect the sample gas, introduce the gas into the gas chromatograph. Determine mercaptan with chromatogram obtained.	Vacuum collecting bottle method or collecting bag method	Not less than 0.05 (flame photometric detector)	

4 Gas sampling method Gas sampling method shall be as follows :

Sampling position of gas for analysis shall be selected the point where the typical gas is collected and, after collected at least two times in a same position within adjacent time, these gases shall be analyzed respectively.