

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS K 0088 : 1997

Methods for determination of benzene in flue gas

ICS 13.040.40; 71.040.40

Descriptors : benzene, exhaust gases, gas analysis, sampling methods, spectrophotometry, gas chromatography, pollutant gases

Reference number : JIS K 0088 : 1997 (E)

K 0088 : 1997

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: 1997-08-20

Date of Public Notice in Official Gazette: 1997-08-20

Investigated by: Japanese Industrial Standards Committee
Divisional Council on Environment

JIS K 0088 : 1997, First English edition published in 1998-01

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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

© JSA 1998

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

PROTECTED BY COPYRIGHT

Methods for determination of benzene in flue gas

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

- Remarks 1 In this Standard, the flue gas means the gas which is emitted through the flue, chimney, duct, and others (hereafter referred to as “duct”) at the chemical reaction process such as burning of fuels and at the working process in the plants relating to petroleum.
- 2 The normative references to this Standard are listed in the Attached Table 1.
- 3 The units and numerical values given in { } in this Standard are based on the traditional units, and are appended for informative reference.

2 Matters in common The matters commonly applicable to method for chemical analysis, sampling method for flue gas, determination by gas chromatography, determination by molecular absorptiometry, and determination by gas chromatography mass spectrometry shall conform respectively to JIS K 0050, JIS K 0095, JIS K 0114, JIS K 0115, and JIS K 0123.

3 Classification of methods for determination and its outline The classification of methods for determination and its outline are as shown in Table 1.

Table 1 Classification of methods for determination and its outline

Method for determination	Outline of method for determination			Applicable condition
	Summary	Sampling method	Determination range volppm (mg/m ³) ⁽¹⁾	
Gas chromatography ⁽²⁾	Introduce sample gas directly or after concentration by absorption at ordinary temperature, and inject it into a gas chromatograph equipped with a hydrogen flame ionization detector, and record its chromatogram.	Collecting bag method Standard sampling volume : 1 l Concentration method Standard sampling volume : 200 ml	Collecting bag method 0.06 to 2 500 (0.2 to 8 700) Concentration method 0.0015 to 50 (0.005 to 175)	
Dinitrobenzene absorptiometry ⁽³⁾	Pass sample gas through ammonium nitrate—sulfuric acid to nitrate benzene, neutralize it, and extract with 2-butanone. Color with adding alkali, and measure the absorbance at 560 nm.	Absorption bottle method absorption liquid : acidic liquid for nitration Volume of liquid : 10 ml Standard sampling volume : 10 l	2 to 20 (7 to 700)	Follow 6.2.1.

Notes⁽¹⁾ “N” affixed to unit is the capital of Normal, and means standard condition (0 °C , 1 atm).

⁽²⁾ Lower limit of determination range shows the case in which, in case of collecting bag method, 5 ml of sample gas is injected into a gas chromatograph, and in case of concentration method, the equivalent to 200 ml