

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS K 0081 : 2012

(JEMAI)

**Method for determination of boron
in flue gas**

ICS 13.040.40;71.040.40

Reference number : **JIS K 0081 : 2012 (E)**

K 0081 : 2012

Date of Establishment: 2012-08-20

Date of Public Notice in Official Gazette: 2012-08-20

Investigated by: Japanese Industrial Standards Committee
Standards Board
Technical Committee on Environment and
Recycling Policy

JIS K 0081 : 2012, First English edition published in 2014-01

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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Printed in Japan

NH/AT

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by Japan Environmental Management Association for Industry (JEMAI) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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Method for determination of boron in flue gas

1 Scope

This Japanese Industrial Standard specifies the method for determination of concentration of boron contained in exhaust which is generated by combustion of coal, waste, biomass, etc. and discharged to gas flue, chimney, duct, etc. (hereafter referred to as “flue gas”), by collecting and analysing particulate and gaseous boron respectively, and then by totalling their results. The particulate boron is a general term for boron and its compound contained in the particulate matter collected by the filter of 99.5 % or over in collection efficiency to the particle of 0.3 μm , and the gaseous boron is a general term for boron and its compound which pass through the filter.

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 0095 *Methods for sampling of flue gas*

JIS K 0116 *General rules for atomic emission spectrometry*

JIS K 0133 *General rules for high frequency plasma mass spectrometry*

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

JIS K 8150 *Sodium chloride (Reagent)*

JIS K 8180 *Hydrochloric acid (Reagent)*

JIS K 8230 *Hydrogen peroxide (Reagent)*

JIS K 8541 *Nitric acid (Reagent)*

JIS K 8576 *Sodium hydroxide (Reagent)*

JIS K 8625 *Sodium carbonate (Reagent)*

JIS K 8819 *Hydrofluoric acid (Reagent)*

JIS K 8863 *Boric acid (Reagent)*

JIS K 9901 *Highly purified nitric acid*

JIS P 3801 *Filter paper (for chemical analysis)*

JIS Z 8808 *Methods of measuring dust concentration in flue gas*

3 Principle of analytical method

The particulate boron in flue gas is determined, after it is collected in the sampling equipment using filter paper, by using inductively coupled plasma atomic emission spectrophotometry (hereafter referred to as “ICP emission spectrometry”) or inductively