

# JIS

JAPANESE  
INDUSTRIAL  
STANDARD

Translated and Published by  
Japanese Standards Association

---

---

**JIS K 0116** : 2014

(JAIMA/JSA)

**General rules for atomic emission  
spectrometry**

---

ICS 71.040.50

Reference number : **JIS K 0116 : 2014 (E)**

K 0116 : 2014

Date of Establishment: 1965-03-01

Date of Revision: 2014-02-20

Date of Public Notice in Official Gazette: 2014-02-20

Investigated by: Japanese Industrial Standards Committee

Standards Board

Technical Committee on Chemical Analysis

---

JIS K 0116:2014, First English edition published in 2015-08

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

---

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

© JSA 2015

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

NH/AT

PROTECTED BY COPYRIGHT

## Contents

		Page
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	ICP atomic emission spectrometry .....	2
4.1	Composition of apparatus .....	2
4.2	Attachments .....	8
4.3	Water, reagents and gas .....	9
4.4	Sampling and preparation of sample solution .....	9
4.5	Preparation of solution for calibration graph, solution for correction of calibration graph and calibration blank solution .....	14
4.6	Setting of measuring conditions .....	14
4.7	Quantitative analysis .....	17
4.8	Control of quality of data (control of accuracy) .....	22
4.9	Installation requirements of apparatus .....	28
4.10	Safety .....	29
4.11	Items to be listed in analytical result .....	30
5	Spark discharge atomic emission spectrometry .....	31
5.1	Composition of apparatus .....	31
5.2	Water, reagent and gas .....	32
5.3	Sampling and preparation of sample .....	33
5.4	Counter electrode .....	33
5.5	Setting of measuring conditions .....	33
5.6	Quantitative analysis .....	34
5.7	Setting condition of apparatus .....	36
5.8	Safety .....	36
5.9	Items to be listed in analytical result .....	36
6	Matters to be listed in individual standard .....	37

## 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 Analytical Instruments Manufacturers' Association (JAIMA)/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 0116:2003** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

# General rules for atomic emission spectrometry

## 1 Scope

This Japanese Industrial Standard specifies general rules when quantitative analysis is conducted using atomic emission spectrometer.

## 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 0211 *Technical terms for analytical chemistry (General part)*

JIS K 0212 *Technical terms for analytical chemistry (optical part)*

JIS K 0215 *Technical terms for analytical chemistry (Analytical instrument part)*

JIS K 0216 *Technical terms for analytical chemistry (Environmental part)*

JIS K 0553 *Testing methods for determination of metallic elements in highly purified water*

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

JIS K 0970 *Piston pipettes*

JIS K 1105 *Argon*

JIS K 8001 *General rule for test methods of reagents*

JIS Z 8402-1 *Accuracy (trueness) and precision) of measurement methods and results—Part 1: General principles and definitions*

ISO 3696 *Water for analytical laboratory use—Specification and test methods*

## 3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS K 0050**, **JIS K 0211**, **JIS K 0212**, **JIS K 0215**, **JIS K 0216**, **JIS K 0553**, **JIS K 0557**, **JIS K 1105**, **JIS K 8001**, **JIS Z 8402-1** and **ISO 3696**, and the following apply.

### 3.1 atomic emission spectrometry

quantitative analysis method carried out by measuring the emission intensity of atomic spectral line of target element of measurement contained in a sample obtained by a vaporizing and exciting discharge technique such as that by means of ICP (see **3.20**), MIP (see **3.21**) or spark discharge

Qualitative analysis is also possible by identifying the wavelength obtained.