



JAPANESE  
INDUSTRIAL  
STANDARD

Translated and Published by  
Japanese Standards Association

---

JIS B 7548 : 2009

**Alcohol hydrometers — Metrological and  
technical requirements and tests**

---

ICS 17.060

Reference number : JIS B 7548 : 2009 (E)

PROTECTED BY COPYRIGHT

14 S

B 7548 : 2009

Date of Establishment: 2009-10-20

Date of Public Notice in Official Gazette: 2009-10-20

Investigated by: Japanese Industrial Standards Committee

Standards Board

Technical Committee on Testing and Measurement

Technology

---

JIS B 7548 : 2009, First English edition published in 2010-10

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 2010

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

CK/HN

PROTECTED BY COPYRIGHT

## Contents

	Page
Introduction .....	1
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	1
4 Verification tolerance .....	2
5 Materials .....	3
6 Performance .....	3
6.1 Strip bearing scale .....	3
6.2 Scale line .....	3
6.3 Graduation .....	4
6.4 Extension of scale .....	4
6.5 Weight chamber .....	4
6.6 Form .....	4
6.7 Effect of surface tension .....	5
7 Test methods .....	5
7.1 Cubical thermal expansion test .....	5
7.2 Strip bearing scale adherence test .....	5
7.3 Heating test .....	5
8 Inscriptions .....	5
9 Verification .....	6
9.1 Verification of individually specified performance .....	6
9.2 Verification method of those out of type .....	6
9.3 Verification method of instrumental error .....	6
10 Inspection in service .....	7
10.1 Technical standard pertaining to the performance .....	7
10.2 Tolerance in service .....	7
10.3 Inspection method pertaining to the performance .....	7
10.4 Inspection method of instrumental error .....	7
11 Corresponding relation .....	7
Annex A (normative) International alcoholometric table .....	9
Annex B (informative) Conversion table of indication values .....	16

## 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 in accordance with the Industrial Standardization Law.

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

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

# Alcohol hydrometers — Metrological and technical requirements and tests

## Introduction

This Japanese Industrial Standard has been prepared to specify technical standards and test methods pertaining to the structure and performance of alcohol hydrometers required as a specified measuring instrument by the Measurement Law. Compliance with this Standard does not mean that the hydrometer has passed the verification specified in the Measurement Law. In addition, the marking specified in Article 19 of the Industrial Standardization Law can not be affixed to declare the conformance to this Standard.

## 1 Scope

This Standard specifies alcohol hydrometers used in transaction or certification in Japan (hereafter referred to as “hydrometers”) marked with scales indicating the alcohol concentration in mixed solution of alcohol and water at the temperature 15 °C by vol% of a defined concentration range within 0 vol% to 100 vol%, and that of 0.1 vol%, 0.2 vol% and 0.5 vol% in scale interval.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall be applied and any revisions (including amendments) made thereafter shall not be applied. For those without the indication of the year, the most recent edition (including amendments) shall be applied.

JIS Z 8103 *Glossary of terms used in measurement*

OIML R 22 : 1975 *International alcoholometric tables*

## 3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in JIS Z 8103 and following apply.

### 3.1 reference temperature

the temperature to be the reference when hydrometers are given the scale of concentration

### 3.2 bases of scale