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Methanol

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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 Methanol Formaldehyde Association (MFA)/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 1501** : 1993 is replaced with this Standard.

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.

In this revision, the quality specification of specific gravity is modified mainly to that of density according to the specification of JIS Z 8203 or the like, because the corresponding International Standard ISO 1387 was withdrawn.

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

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Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Quality	1
4 Test method	2
4.1 Matters in common	2
4.2 Sampling method	3
4.3 Test method of density and specific gravity	4
4.4 Test of methanol purity	5
4.5 Test of free acid	7
4.6 Test of residue on evaporation	8
4.7 Test of iodoform-producing material	9
4.8 Test of solubility in water	11
4.9 Test of colouring material by sulfuric acid	11
4.10 Potassium permanganate-reducing material test	12
4.11 Test of water content	12
5 Results of test	14
6 Inspection	14
7 Record of test results	14
8 Marking	15
9 Precautions for safety and sanitation	15

Methanol

Introduction This Japanese Industrial Standard is a revision of former **JIS K 1501** of which quality specification of specific gravity has been modified mainly to that of density according to the specification of **JIS Z 8203**, because the corresponding International Standard **ISO 1387** *Methanol for industrial use—Methods of test* was withdrawn in 2002.

1 Scope This Standard specifies methanol for industrial use.

Remarks : When making a usual transaction inside and outside of this country, the unit by specific gravity has been recently employed. When the operation in **7.1** of **JIS K 0061** is used, the measurements of specific gravity by hydrometer is specified as well as the measurement by density. For this reason, though **JIS Z 8203** standardly adopts the measurement by gravity, this Standard uses the value of specific gravity set in parenthesis () as well as the value of density.

2 Normative references The following standards contain provisions which, through reference in this Standard, 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 0061 *Test methods for density and relative density of chemical products*

JIS K 0068 *Test methods for water content of chemical products*

JIS K 0114 *General rules for gas chromatographic analysis*

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

JIS K 8180 *Hydrochloric acid*

JIS K 8247 *Potassium permanganate*

JIS K 8514 *Sodium bromide*

JIS K 8540 *Sodium (+)-tartrate dihydrate*

JIS K 8876 *Magnesium powder*

JIS K 8891 *Methanol*

JIS K 8920 *Iodine*

JIS K 8951 *Sulfuric acid*

JIS Z 8203 *SI units and recommendations for the use of their multiples and of certain other units*

JIS Z 8401 *Guide to the rounding of numbers*

3 Quality The methanol for industrial use specified here shall be colourless and transparent liquid having no offensive odour, and its quality, when tested according to clause **4**, shall conform to the requirements shown in table 1.

Table 1 Quality

Item		Performance
Density (or specific gravity) ⁽¹⁾	Density (15 °C) g/cm ³	0.796 5 max.
	[Specific gravity (15/4 °C)]	0.796 5 max.
Methanol	mass fraction %	99.8 min.
Free acid (as formic acid)	mass fraction %	0.002 max.
Residue on evaporation	mass fraction %	0.002 max.
Iodoform-producing material (as acetone)	mass fraction %	0.01 max.
Solubility in water		Clear transparent or nearly clear transparent
Colouring material by sulfuric acid		Thinner than standard solution D
Potassium permanganate-reducing material test	min	40 min.
Water content	mass fraction %	0.1 max.

Note ⁽¹⁾ Specific gravity may be used.

Remarks 1 Specific gravity (15/4 °C) is converted to density (15 °C) according to the following formula.

$$d = \frac{G}{0.999\ 97}$$

where, G : density (15 °C) (g/cm³)

d : specific gravity (15/4 °C)

0.999 97 : density of water at 4 °C (g/cm³)

- 2 The numerical value regarding density (or specific gravity) listed in table 1 corresponds as follows.

Density (20 °C): 0.791 9 g/cm³ max.

Specific gravity (20/20 °C): 0.793 3 max.

4 Test method

4.1 Matters in common General matters applicable commonly to chemical analysis shall follow **JIS K 0050**, those to gas chromatography shall follow **JIS K 0114**, those to rounding off shall follow **JIS Z 8401** and as follows:

- When only a solution is mentioned without mentioning the kind of solvent, it always means water solution.
- When the concentration of solution is indicated in terms of % in the items of quality and reagents, it means, unless otherwise provided, mass percentage.
- When reading a graduation by liquid surface, read upper border or lower border of liquid surface, which results from interfacial tension, as shown in below items.

In case of hydrometer for specific gravity Upper border

In case of measuring cylinder Lower border

- d) Hydrometer for specific gravity and thermometer shall be previously calibrated by or standard hydrometer and standard thermometer.

4.2 Sampling method

4.2.1 General The method to do sampling from the product in one lot whose quality is regarded as uniform shall be either of the following according to the type of container for product. When there is a method, time, and site to do sampling other than those here mentioned, however, they can be arranged based on the agreement of the parties concerned.

- a) **Case of large sized container (tank, tank truck, tank lorry, tanker, etc.)** Using sampler⁽²⁾ for large liquid sample, take out 3 equi-volume samples from each centre of three layers which divide nearly equally the content, transfer them in a suitable container to mix well, and out of it submit 500 ml or more to test.

Note ⁽²⁾ Sampler for large liquid sample is made of corrosion-resistant metal or glass equipped with a cover as shown in figure 1, and able to pour out the sample as it has been filled, after it was put into an adequate depth and its cover was opened for filling.

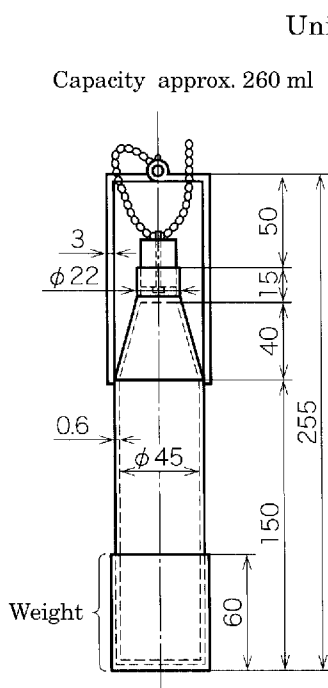


Figure 1 Example of sampler for large liquid sample

- b) **Case of small container (18 L can, steel drum can, etc.)** Using a sampler⁽³⁾ for small liquid sample, take equi-volume samples from each of the containers⁽⁴⁾, transfer them into a suitable container to mix well, and submit 500 ml or more out of it to test.

Notes ⁽³⁾ Sampler for small liquid sample is made of corrosion-resistant metal or glass as shown in figure 2, and can be put into sample as its inlet was opened, and after it was filled with sample, it can be drawn out with its inlet shut.