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Nitrocellulose lacquer

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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 the Japan Paint Manufacturers Association (JPMA)/the 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 5531 : 2002** is replaced with this Standard.

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In the event of any doubts arising as to the contents,
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Contents

	Page
1 Scope	1
2 Normative references	1
3 Definitions	2
4 Classification	2
4.1 Clear lacquer	2
4.2 Lacquer enamel	2
5 Quality	3
6 Evaluation sample	4
7 Test method	5
7.1 Sampling method	5
7.2 Examination and preparation of samples for testing	5
7.3 General condition for tests	5
7.4 Condition in container	6
7.5 Color number (Gardner)	6
7.6 Fineness of grind	6
7.7 Transparency	6
7.8 Application properties	7
7.9 Drying time	7
7.10 Appearance of paint film	7
7.11 Hiding power	7
7.12 Specular gloss	8
7.13 Blocking resistance	8
7.14 Bleeding	8
7.15 Heating stability of paint film	9
7.16 Water resistance	9
7.17 Boiling-water resistance	10
7.18 Gasoline resistance	11
7.19 Non volatile matter	12
8 Inspection	12
9 Marking	12

Nitrocellulose lacquer

1 Scope This Japanese Industrial Standard specifies, among nitrocellulose lacquer, clear lacquer which can be used both for transparent coating on wood surface and for a finish coating over the coated film of lacquer enamel, and lacquer enamel which can be used as a topcoat on metal surface or wood surface (hereafter referred to as “nitrocellulose lacquer”).

Remarks : The nitrocellulose lacquer shall not contain any of formaldehyde-based preservatives, urea resins, phenol resins or melamine resins.

Information : The nitrocellulose lacquer is a liquid, volatile coating which includes industrial grade nitrocellulose and alkyd resin as the main film forming component and which forms a dry film in a short time by air drying.

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 G 3141 *Cold-reduced carbon steel sheets and strip*

JIS G 3303 *Tinplate and blackplate*

JIS K 5500 *Glossary of terms for coating materials*

JIS K 5600-1-1 *Testing methods for paints—Part 1 : General rule—Section 1 : General test methods (conditions and methods)*

JIS K 5600-1-2 *Testing methods for paints—Part 1 : General rules—Section 2 : Sampling*

JIS K 5600-1-3 *Testing methods for paints—Part 1 : General rule—Section 3 : Examination and preparation of samples for testing*

JIS K 5600-1-4 *Testing methods for paints—Part 1 : General rule—Section 4 : Standard panels for testing*

JIS K 5600-1-6 *Testing methods for paints—Part 1 : General rule—Section 6 : Temperatures and humidities for conditioning and testing*

JIS K 5600-1-7 *Testing methods for paints—Part 1 : General rule—Section 7 : Determination of film thickness*

JIS K 5600-1-8 *Testing methods for paints—Part 1 : General rule—Section 8 : Reference sample*

JIS K 5600-2-1 *Testing methods for paints—Part 2 : Characteristics and stability of paints—Section 1 : Colour number (Gardner method)*

JIS K 5600-2-2 *Testing methods for paints—Part 2 : Characteristics and stability of paints—Section 2 : Viscosity*

JIS K 5600-2-5 *Testing methods for paints—Part 2 : Characteristics and stability of paints—Section 5 : Fineness of grind*

JIS K 5600-3-3 *Testing methods for paints—Part 3 : Film formability—Section 3 : Through-dry*

- JIS K 5600-4-1 *Testing methods for paints—Part 4 : Visual characteristics of film—Section 1 : Hiding power (for light-coloured paints)*
- JIS K 5600-4-3 *Testing methods for paints—Part 4 : Visual characteristics of film—Section 3 : Visual comparison of the colour of paints*
- JIS K 5600-4-5 *Testing methods for paints—Part 4 : Visual characteristics of film—Section 5 : Colorimetry (Measurement)*
- JIS K 5600-4-6 *Testing methods for paints—Part 4 : Visual characteristics of film—Section 6 : Colorimetry (Calculation of colour differences)*
- JIS K 5600-4-7 *Testing methods for paints—Part 4 : Visual characteristics of film—Section 7 : Specular gloss*
- JIS K 5600-6-1 *Testing methods for paints—Part 6 : Chemical property of film—Section 1 : Resistance to liquids (General methods)*
- JIS K 5600-6-3 *Testing methods for paints—Part 6 : Chemical property of film—Section 3 : The effect of heat*
- JIS K 5601-1-1 *Testing methods for paint components—Part 1 : General rule—Section 1 : Common test conditions for paint components*
- JIS K 5601-1-2 *Testing methods for paint components—Part 1 : General rule—Section 2 : Determination of non-volatile matter*
- JIS K 5960 *Household paint for interior wall*
- JIS K 8594 *Petroleum benzine*
- JIS K 8680 *Toluene*
- JIS R 3202 *Float glass and polished plate glass*
- JIS R 3503 *Glass apparatus for chemical analysis*
- JIS R 6253 *Waterproof abrasive papers*
- JIS Z 8401 *Guide to the rounding of numbers*
- JIS Z 8721 *Colour specification—Specification according to their three attributes*

3 Definitions For the purpose of this Standard, the definitions given in **JIS K 5500** apply.

4 Classification Classification shall be as follows.

4.1 Clear lacquer Clear lacquer is a transparent liquid coating whose main materials are industrial grade nitrocellulose, alkyd resin and solvent. It shall be grouped into the following two according to their use.

- a) Clear lacquer for wood
- b) Clear lacquer for finishing

4.2 Lacquer enamel Lacquer enamel is an opaque or a transparent coloured liquid coating prepared by kneading colorant together with the clear lacquer. It shall be grouped into the following five types according to the colour.

- a) **Lacquer enamel**, white

- b) **Lacquer enamel**, tint colour⁽¹⁾
- c) **Lacquer enamel**, silver
- d) **Lacquer enamel**, transparent colour⁽²⁾
- e) **Lacquer enamel**, other colours

Notes (1) Tint colour means such faint colour as gray or cream appearing on the paint film whose main ingredient is white coating, and whose lightness V is from 6 or more to and excluding 9 by **JIS Z 8721**.

(2) The transparent colour of lacquer enamel means the coloured coating, when it is applied as overcoat, through which the colour of original paint film can be seen.

5 Quality The quality shall conform to the requirements shown in Table 1 when it is tested according to clause 7.

Table 1 Quality

Items	Classification		
	Clear lacquer		Lacquer enamel
	Clear lacquer for wood	Clear lacquer for finishing	
Condition in container	—		Mixing gives uniform condition without any hard lumps
Color number (Gardner)	12 max.		—
Degree of dispersion μm (Excepting silver colour)	—		10 max.
Transparency	It shall be transparent.		—
Application properties	Double coatings shall give no hindrance on the work of coating.		
Drying time (Through-dry)	1 h max.		
Appearance of paint film	The appearance of paint film shall be in normal condition.		
Hiding power (Except silver and transparent colour)	—		It shall be 90 or more for white and tint colour, and 80 or more for other colours. Provided that it shall be 50 or more for transparent red, blue and yellow.
Specular gloss (60°) ⁽³⁾	—		80 min.
Blocking resistance	There shall be blocking resistance.		
Bleeding ⁽⁴⁾ (Except white and silver colour)	—		There shall be no bleeding.
Heating stability of paint film (Restricted to white)	There shall be no change in appearance when it is heated at 115 °C to 120 °C for 2 h.		