

الهيئة السعودية للمواصفات والمقاييس والجودة

Saudi Standards, Metrology and Quality Org.

(SASO)



SASO DS 2704:2026

**Paints and varnishes – Nitrocellulose paints –
Coloring pigment**

ICS: 87.040

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Foreword

The technical team " Paints and Varnishes" of Saudi Standards, Metrology and Quality Organization (SASO) has prepared the Saudi Standard No. SASO DS 2704:2026 “*Paints and varnishes – Nitrocellulose paints – Coloring pigment*” based on relevant Standards and references.

Paints and varnishes – Nitrocellulose paints – Coloring pigment

1- SCOPE AND FIELD OF APPLICATION

These standard covers air-drying Nitrocellulose Based Pigmented Topcoats for use on internal metal and wooden furniture and fixtures.

2- COMPLEMENTARY REFERENCES

- 2.1** SASO ISO 15528 Paints and Varnishes – Sampling
- 2.2** SASO ISO 1513 Paints and Varnishes – Examination and Preparation of test Samples
- 2.3** SASO ISO 3251 Paints, varnishes and plastics — Determination of non-volatile-matter content
- 2.4** SASO ASTM D562 Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer
- 2.5** SASO ISO 3668 Paints and varnishes — Visual comparison of colour of paints
- 2.6** SASO ISO 1524 Paints, varnishes and printing inks - Determination of fineness of grind
- 2.7** SASO ISO 9117-4 Paints and varnishes - Drying tests – Part 4: Test using a mechanical recorder
- 2.8** SASO ISO 1519 Paints and varnishes - Bend test (cylindrical mandrel)
- 2.9** SASO ISO 2409 Paints and varnishes — Cross-cut test
- 2.10** SASO ISO 6504-3 Paints and varnishes - Determination of hiding power – Part 3: Determination of contrast ratio of light-coloured paints at a fixed spreading rate
- 2.11** ISO 2813 Paints and varnishes — Determination of gloss value at 20°, 60° and 85°
- 2.12** SASO ISO 16474-3 Paints and varnishes - Methods of exposure to laboratory light sources – Part 3: Fluorescent UV lamps
- 2.13** SASO ISO 6503 Paints and varnishes - Determination of total lead - Flame atomic absorption spectrometric method
- 2.14** SASO ISO 1518-2 Paints and varnishes — Determination of scratch resistance Part 2: Variable-loading method

3- DEFINITIONS

- 3.1 Vehicle:** The liquid portion of the paint composed of the binder, solvents and additives in which the pigments are dispersed.
- 3.2 Pigments:** These are the dry (powder) ingredients of the paint that Imparts color, hiding and other aesthetics. These may be composed of fillers and/or colored pigments.

4- REQUIREMENTS

4.1 Condition in container

The paint shall be free from grit, lumps and skin and shall show no pigment settling or caking. The paint shall be readily mixed manually into a homogenous state.

4.2 Non-Volatile Content

The non-volatile content of the paint shall not be less than 35% by weight when tested as per 2.3.

4.3 Consistency

The paint shall be in such a condition that stirring readily produces a smooth uniform mixture of good consistency. It shall have a viscosity between 110 and 130 Krebs Unit (KU) at $23^{\circ}\pm 2$ C when tested as per 2.4.

4.4 Color

The color of the paint shall be as close as possible to the reference standard sample when tested as per 2.5.

4.5 Fineness of Grind

The particle size of the product shall be no greater than 10 microns for gloss and not more than 20 microns for semi-gloss, satin and matt when tested as per 2.6

4.6 Application properties

The paint shall have satisfactory application properties when applied according to the manufacturer's recommendations and shall have a finish free of irregularities like orange peel shape, craters, pinholes and other surface defects.

4.7 Overcoatability

The paint film shall be recoatable with the same lacquer 1 hour after application of the initial coat and shall show no sign of self lifting or any other surface irregularities.

4.8 Drying Time

The paint should become surface dry in not more than 20 minutes and become hard dry within 1 hour at a temperature of $23 \pm 2^{\circ}\text{C}$ and a relative humidity of not more than 50% when tested as per 2.7.

4.9 Appearance of Dried Film

The dried paint film must have a smooth finish free from orange peel shape, pin-holes and other surface defects.

4.10 Flexibility

The paint film applied on a tin plate panel at a dry film thickness of 25 micron and dried for 7 days at $23^{\circ} \pm 2^{\circ}\text{C}$ and a relative humidity of not more than 50% shall bend over 6mm diameter mandrel without cracking or flaking when tested as per 2.8.

4.11 Adhesion- Cross Cut

The dry applies paint in accordance with the manufacturer's instructions, shall not cross **class 1** when tested in as per 2.9.

4.12 Dry Opacity

The film of the paint applied by a 150 micron gap Block or wired Bar applicator shall give a minimum dry film contrast ratio of not less than 90% when tested as per 2.10

4.13 Gloss

The Specular gloss of Varnish shall be as follows when tested as per 2.11:

Category	Measured at angel	Gloss Value
High Gloss	60°	>85%
Semi-Gloss	60°	40 – 60%
Satin finish	60°	30-40%
Matt finish	85°	<10%

4.14 Accelerated Weathering

The paint shall be able to withstand 168 hours of QUV exposure without appreciable deterioration. The loss of gloss should not exceed 10 units and shall show no sign of chalking when tested as per 2.12.

4.15 Lead Content

The lead content should not exceed 0.009% of the total mass of the varnish when tested as per 2.13.

4.16 Scratch Resistance

When applying the paint film on clean tinplate at 50-micron (dry) and left to dry for 7 days at a temperature of $23\pm 2^{\circ}\text{C}$ and a relative humidity not exceeding 50%, this coating will withstand the scratch test at a weight of 1 kg as tested according to clause 2/14.

4.17 Storage Properties

The paint, when stored at a temperature of 5 to 38 degrees centigrade in the original sealed containers, shall retain the properties specified in this standard for a period of not less than twelve months.

5- SAMPLING

5.1 A representative sample of not less than 300 ml. shall be taken in accordance with the Saudi Standard mentioned in item 2.1.

5.2 Samples shall be prepared for testing in accordance with the Saudi Standard mentioned in item 2.2.

6- METHODS OF TESTING

Tests shall be carried out on the filled containers as well as on the test samples as per item 2.

7- PACKAGING

The paint shall be packed in clean, dry, airtight suitable containers. The containers shall be packed in such a way that it leaves an empty unfilled space of 15% of the container.

8- MARKING

Each container shall be legibly and indelibly marked with the following information in Arabic or both Arabic and English.

8.1 Name, type and color of the paint

8.2 Name of manufacturer and/or trademark

8.3 Country of origin and whether manufactured under license to named brand/manufacturer

8.4 Batch number of the product

8.5 Expiry date in month and year

8.6 Mass and/or volume of the paint

8.7 Application instructions

8.8 Warning relating to flammability and toxicity if required