

# JIS

JAPANESE INDUSTRIAL STANDARD

Colophonium

JIS K 5902—1969

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## JAPANESE INDUSTRIAL STANDARD

J I S

## Colophonium

K 5902-1969

1. Scope

This Japanese Industrial Standard specifies the rosin made of the raw pine resin.

2. Class and Grade

The rosin shall be classified in the next two classes followed by the serial numbers showing degrees of color brightness:

Class 1      No. 1 to No. 5

Class 2      No. 1 to No. 8

3. Quality Requirements

The rosin shall conform to the quality requirements specified in Table 1 and Table 2.

Table 1

| Item                                        | Class 1     | Class 2     |
|---------------------------------------------|-------------|-------------|
| Appearance                                  | Transparent | Transparent |
| Color number (Table 2)                      | Nos. 1 to 5 | Nos. 1 to 8 |
| Softening point (ring and ball method) (°C) | 75 min.     | 70 min.     |
| Acid value                                  | 165 min.    | 160 min.    |
| Saponification value                        | 170 to 185  | 165 to 185  |
| Unsaponifiabiles (%)                        | 8 max.      | 11 max.     |
| Ash content (%)                             | 0.02 max.   | 0.05 max.   |
| Insoluble matter (%)                        | 0.05 max.   | 0.1 max.    |

Table 2

| No.                     | No. 1        | No. 2               | No. 3               | No. 4               | No. 5               | No. 6               | No. 7               | No. 8               |
|-------------------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Color brightness number | 10 and under | Over 10 to 17 incl. | Over 17 to 20 incl. | Over 20 to 25 incl. | Over 25 to 35 incl. | Over 35 to 50 incl. | Over 50 to 60 incl. | Over 60 to 70 incl. |

#### 4. Method of Sampling

The rosin is separated in respective lots of manufacturing and one container from each lot shall be extracted at random, which is deemed to represent the specific lot. Samples, each in roughly equal quantity are taken in lumps<sup>(1)</sup> from each of the upper, middle and lower parts of the extracted container. The samples in the total weight of about 200 g are taken, put in a light proof container and transported to the test place, screwed up tight.

Note <sup>(1)</sup> A lump shall weigh 20 to 30 g.

#### 5. Method of Test

5.1 Preparation of Test The sample shall be crushed and agitated sufficiently, immediately before the test.

5.2 Color Numbers To 25 g of the sample, about 20 ml of toluene (Extra pure under JIS K 8680) shall be added and after the mixture is dissolved by lightly stirred in a water bath below 80°C, the solution shall be rapidly cooled to the room temperature. Then the quantity of the solution shall be increased to 50 ml by further adding the toluene. The increased solution and the color number standard liquids<sup>(2)</sup> shall be set side by side, being filled in separate, water transparent and thin-walled test tubes (JIS R 3503) of 15 mm dia., about 60 mm deep, and inspected by looking through sidelong under the diffused daylight. In comparison of brightness, a brighter one shall be designated to have a smaller color number. This test shall be conducted immediately upon preparation of the test solution.

Note <sup>(2)</sup> Preparation Method of Color Number Standard Liquids About 1 g of iodine (Extra pure under JIS K 8920) is dissolved in about 100 ml of 10 % solution of potassium iodide (Extra pure under JIS K 8913) and by titrating the above with sodium thiosulfate solution, the concentration of iodine is determined.

Then each definite quantity of the whole solution is distributed in a measuring flask and diluted with water so that the iodine content of 100 ml of the solution shall be 10 mg, 17 mg, 20 mg, 25 mg, 35 mg, 50 mg, 60 mg and 70 mg each. The respective contents of the solution shall be designated the color Nos. 10, 17, 20, 25, 35, 50, 60 and 70 of the standard liquids. The standard liquids shall be newly prepared in each test.

5.3 Softening Point The sample shall be melted rapidly in as low temperature as available and poured in the ring<sup>(3)</sup> placed on a flat metal plate, taking good care to avoid bubbling. After cooled down, the part rising above the upper level of the ring shall be cut away with a little heated knife.

Then the support<sup>(4)</sup> shall be put in a glass container (85 mm min. in diameter and 127 mm min. in height) into which the cooled water after once boiled shall be poured to the depth of not less than 90 mm. The steel ball (9.5 mm in diameter and 3.5 g in weight) and the sample-filled ring shall then be immersed in the water so that the two may not contact each other, while the temperature of the water is kept at  $20 \pm 5$  °C for 15 min. After that the steel ball is placed on the center of the sample in the ring which is situated at the determined spot on the support.