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JAPANESE INDUSTRIAL STANDARD

Testing Methods for Softening Point of Epoxide Resins

JIS K 7234—1986

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Testing Methods for Softening Point of
Epoxide Resins

K 7234-1986

1. Scope

This Japanese Industrial Standard specifies the testing methods for softening point of solid epoxide resins at ordinary temperature.

2. Definitions

The definitions of main terms used in this standard shall be as follows:

- (1) epoxide resin The resin is in accordance with the definition in JIS K 7231.
- (2) softening point This means the temperature when epoxide resin will reach a certain specified condition⁽¹⁾ through gradual softening by heating.

Note (1) The certain specified condition referred to is shown in each of testing methods.

3. Classification of Testing Methods

The testing methods shall be classified into the following two methods for testing.

- (1) Ring and Ball Method
- (2) Mercury Substitution Method

4. Testing Methods4.1 Ring and Ball Method

4.1.1 Summary of Testing Method Support horizontally the specified ring, in which the sample is filled, in a water bath or glycerin bath, and after putting the ball having specified mass at the center of the sample, increase temperature at the rate previously specified. Find the temperature when the softened sample touches the bottom plate of the ring holder owing to the weight of the ball, and take this temperature as softening point.

4.1.2 Devices and Apparatus The tester shall have a structure as shown in Fig. 1 and be the same one as the tester specified in 5.4 of JIS K 2207.

- (1) Ring The shape and dimensions shall be as shown in Fig. 2 (a), and the ring is made of brass or of the brass electroplated by nickel or chromium.
- (2) Ball This ball is 3/8 (diameter 9.525 mm), grade 60 or more, and weighs 3.5 ± 0.05 g in mass, which is specified in JIS B 1501.
- (3) Ball Guide The shape and dimension are shown in Fig. 2 (b), and the ball guide is made of brass or the brass electroplated by nickel or chromium.

Applicable Standards: See page 10.

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- (4) Ring Holder The shape and dimension of the ring holder are as shown in Fig. 3, made of brass or of the brass electroplated by nickel or chromium, and can hold a thermometer and a ring as follows:

The holder can hold horizontally the ring 75 mm or more lower than the top of heating bath and 50 mm or more lower than the level of bath liquid.

The distance between the under surface of the ring and the upper surface of base plate of the holder is 25.4 mm, and the base plate is located 12.7 to 19.1 mm from the bottom of a heating bath.

The thermometer is set so that the lower end of the mercury bulb may be the same level of the ring, and the bulb may not be apart more than 10 mm from the ring, and it may not touch the shelf for the sample.

- (5) Heating Bath This is a beaker of 100 ± 2 mm in outside diameter and 140 to 150 mm in height as given in Fig. 1, and its material is hard glass of Grade 1 specified in JIS R 3503.