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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 6031-2017

Rubber, vulcanized or thermoplastic -- Determination of hardness (hardness between 10 IRHD and 100 IRHD)

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 6031-1998 "Determination of hardness of vulcanized rubber or thermoplastic rubber (10 to 100 IRHD)", and

GB/T 6031-1998 compared to the main technical changes are as follows.

- increased calibration and verification requirements for the use of the instrument (see Chapter 5);

- increased the position of the measuring point on the specimen (see Chapter 11);

- standardize the representation of the results and add examples (see Chapter 12);

--- Adjust the "precision" in Chapter 13 of GB/T 6031-1998 to Appendix B and update the contents (see Appendix B).

This standard uses the translation method equivalent to ISO 48..2010 "vulcanized rubber or thermoplastic rubber hardness determination (10IRHD ~

100IRHD) ".

And the normative reference in this standard international documents are consistent with the relationship between China's documents are as follows.

Rubber - Physical test methods - General procedures for the preparation and adjustment of specimens (ISO 23529..2004, IDT) GB/T 2941-2006.

This standard is proposed by the China Petroleum and Chemical Industry Association.

This standard by the National Rubber and Rubber Products Standardization Technical Committee (SAC/TC35) centralized.

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Introduction

The hardness test provided by this standard provides a means for rapidly measuring the hardness of the rubber by measuring the compressive properties of the rubber, and other materials

The hardness test for the determination of permanent deformation resistance is different.

The hardness is measured at a predetermined pressure by the press-in depth of the ball-shaped pin pressed into the rubber sample.

The hardness values can be obtained from the empirical relationship between the pressing depth and the Young's modulus of the fully elastic isotropic material. This applies to

Most of the rubber.

When it is necessary to determine the Young's modulus of the material, appropriate test methods, such as those specified in ISO 7743, should be used.

The hardness test guidelines given in ISO 18517 are also useful references.

Vulcanized rubber or thermoplastic rubber

Determination of hardness (10IRHD ~ 100IRHD)

Caution. Personnel using this standard should have practical experience in formal laboratory work. This standard does not address all possible security issues,

It is the responsibility of the user to take appropriate safety and health measures and to ensure compliance with the conditions set forth in the relevant national regulations.

Note. Some of the operations involved in this standard may be used to generate some substances or produce waste and have an adverse effect on the local environment.

Develop appropriate documents for the disposal of these substances after use.

1 Scope

This standard specifies four methods for the determination of the hardness of vulcanized rubber or thermoplastic rubber (standard hardness method) and four pairs

Standard Test Method for Apparent Hardness of Bending Surface Specimens (Apparent Hardness Method). The hardness values are expressed in terms of rubber international hardness (IRHD). These measurements

The applicable hardness range is from 10IRHD to 100IRHD.

The main difference between these methods is the size of the spherical indenter and the magnitude of the force, and the appropriate method should be selected according to the particular application. Each one

The scope of application of the method shown in Figure 1.

This standard does not specify a method for determining hardness using a portable durometer, which is described in ISO 7619-2.

Description.

X - hardness (IRHD);

a - Method L and Method CL;

b - Method N, M and Method CN, CM;

c - Method H and Method CH.

Figure 1 The scope of application of various methods

This standard specifies the following four methods for determining the standard hardness.

Method N (conventional test). suitable for rubber hardness in the 35IRHD ~ 85IRHD range, can also be used for hardness in the 30IRHD ~

95IRHD within the range of rubber.

Method H (high hardness test). suitable for rubber hardness in the 85IRHD ~ 100IRHD range.

Method L (low hardness test). suitable for rubber hardness in the range of 10IRHD ~ 35IRHD.

Method M (micro test). Essentially scaled down method N (conventional test), can be used for thin and small samples. Apply to rubber hard

Degrees in the 35IRHD ~ 85IRHD range, can also be used for hardness in the range of 30IRHD ~ 95IRHD rubber.

Note 1. In the range of 85 IRHD to 95 IRHD and 30 IRHD to 35 IRHD, the hardness values measured by method N are calculated using the method H or method L

The data are not exactly the same, for technical purposes the difference is usually not obvious.

Note 2. Due to the various surface factors of the rubber, such as rough surface caused by grinding, can lead to micro-test and conventional test results are not exactly the same.

This standard also provides four methods for determining the apparent hardness of curved surfaces, CN, CH, CL and CM. These methods are used for testing

The modification of the rubber surface is a modification of the methods N, H, L and M, in which case there are two main possibilities.