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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 36790-2018

**Plastics -- Polyamides -- Accelerated conditioning of test
specimens**

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Foreword

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

This standard uses the redrafting method to modify the use of ISO 1110.1995 "plastic polyamide sample acceleration state adjustment".

The technical differences between this standard and ISO 1110.1995 and their reasons are as follows.

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, specific tune

The whole is.

* Replaced ISO 291.1977 with GB/T 2918 equivalent to the international standard;

* Replaced ISO 483.1988 with ISO 483.

This standard was proposed by the China Petroleum and Chemical Industry Federation.

This standard is under the jurisdiction of the National Plastics Standardization Technical Committee Engineering Plastics Subcommittee (SAC/TC15/SC9).

This standard was drafted. Blonde Technology Co., Ltd., Zhonglan Chenguang Chemical Research and Design Institute Co., Ltd., Shanghai Blonde Technology Development Co., Ltd., Guangzhou Jusailong Engineering Plastics Co., Ltd.

Introduction

The water content of polyamide (hereinafter referred to as PA) affects its properties. The PA performance test value is only in the case of the specified water content of the sample.

It is reproducible. The sample is adjusted in state and reaches equilibrium in a specific temperature and relative humidity environment. The test value is heavy.

Present.

The rate of state adjustment is affected by the rate of water absorption and is a function of temperature. The rate of water absorption is very low at room temperature. For example, a thick

The 4mm PA66 sample can be used in a standard environment (temperature 23 ° C/relative humidity 50%, see GB/T 2918), it takes more than 1 year to reach

To its equilibrium water content. Increasing the temperature allows the sample to reach equilibrium in a relatively short period of time. This standard gives the sample accelerated state.

The method of adjustment.

Plastic polyamide sample acceleration state adjustment

1 Scope

This standard specifies the acceleration state adjustment method for homopoly polyamide and copolymer polyamide test specimens.

This standard applies to polyamides containing fillers and other additives, but not for extracts greater than 2% (mass fraction)

Polyamide variety.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

Standard environment for GB/T 2918 plastic sample conditioning and testing (GB/T 2918-1988, ISO 291.1997, IDT)

ISO 483 Plastics maintain a constant humidity Small sealed container for conditioning and testing with aqueous solutions

3 Principle

The test sample is placed in an environment with a temperature of $70\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ and a relative humidity of $(62 \pm 1)\%$ (the difference between the dry and wet bulbs is $10\text{ }^{\circ}\text{C} \pm 0.3\text{ }^{\circ}\text{C}$).

Until the sample absorbs more than 95% of its equilibrium value.

The method is similar to the equilibrium water content adjusted in a standard environment (temperature $23\text{ }^{\circ}\text{C}$ /relative humidity 50%). Speed up the sample

The value of the mechanical properties measured after the state adjustment is not significantly different from the value adjusted by the standard environmental state (temperature $23\text{ }^{\circ}\text{C}$ /relative humidity 50%).

4 instruments

4.1 Constant temperature and humidity chamber. with fan to achieve airtight circulation, the temperature can be maintained at $70\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, the relative humidity can be maintained at $(62 \pm 1)\%$ (dry and wet bulb temperature difference is $10\text{ }^{\circ}\text{C} \pm 0.3\text{ }^{\circ}\text{C}$).

4.2.1 The oven can maintain a temperature of $70\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$.

4.2.2 A closed container, such as a dryer, is partially filled with a saturated aqueous solution of potassium iodide according to the general procedure given in ISO 483. In the whole shape

During the conditioning, leave enough salt in the solution. The sample may slightly fade due to iodine absorption.

5 test steps

Place the sample in a preheated constant temperature and humidity chamber (4.1) or in a closed container (4.2.2) in an oven (4.2.1). Through the right

Methods, such as stents, ensure that the surface of each specimen is almost completely in contact with the surrounding air.

After the sample has been adjusted for a certain period of time t_1 (see Table 1), it is taken out from the constant temperature and humidity chamber or the closed container and placed in a standard environment (warm

The temperature was $23\text{ }^{\circ}\text{C}$ /humidity 50%, see GB/T 2918) for 1 h, weighing (accurate to 0.1 mg). Then, follow the above method and continue to accelerate