

ICS 83.080.01

CCS G 31



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

GB/T 5470-2008

Replacing GB/T 5470-1985

**Plastics -- Determination of the brittleness temperature by
impact**

塑料 冲击法脆化温度的测定

(English Translation)

Issued on: August 14, 2008

Implemented on: April 1, 2009

Issued by: Standardization Administration of China

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Foreword

This revised standard adopts ISO 974:2000 "Plastics --- Impact embrittlement temperature measurement method" (in English).

This standard is based on ISO 974:2000 redrafted.

This standard and ISO 974:2000 main technical differences are as follows.

- Increased in this standard description of the two test methods (Chapter 1);
- Increasing the normative references (Chapter 2);
- ISO 974:2000 international standard referenced by the respective country instead of the standard (Chapter 2);
- Increasing the B-type test machine (with ASTM D746. the 2007 A-type tester) (5.2);
- Added "measuring" and "stopwatch" provisions (5.7, 5.8);
- Increasing the B-type specimens (with ASTM D746. in 2007 I type specimen) (6.3);
- Increase (Cap. 10) chapter "precision";
- Test report added "indicate the used test method" (Chapter 11).

For ease of use, this standard made the following editorial changes.

--- With a decimal point "." Instead of a comma as the decimal point "." this standard replaces GB/T 5470-1985 "plastic impact embrittlement temperature measurement." this standard and GB/T 5470-1985 The main differences are as follows.

- Increased in this standard description of the two test methods (Chapter 1);
- Increased (Chapter 2) Chapter "normative references";
- Increasing the B-type test machine (with ASTM D746. the 2007 A-type tester) (5.2);

Cancel the reading microscope (GB/T 5470-1985 3.6) --- instrument;

--- Increased the requirements for housing and a stirrer (5.5 and 5.6);

--- Increasing the B-type specimens (with ASTM D746. in 2007 I type specimen) (6.3);

--- Cancellation notched (see GB/T 5470-1985 4.4);

--- Increased (Cap. 10) chapter "precision";

--- Test report added "indicate the used test method" (Chapter 11).

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Standardization Technical Committee of plastic (SAC/TC15) centralized.

This standard was drafted. China Sinopec Beijing Yanshan Company Resin Application Research Institute.

Participated in the drafting of this standard. National Quality Supervision and Inspection Center of synthetic resin, the National Chemical Building Materials Testing Center (Materials Testing Section), National Petrochemical organic synthetic resin raw material quality inspection center, Guangzhou Blonde Technology Co., Ltd.

Introduction

Plastic in a variety of applications required to withstand or not withstand the impact of low-temperature conditions under bending. Orientation generated during processing, thermal history, red the material is applied to the strike force, particularly urging speed will affect the polymer's brittleness. When applied deformation conditions and test methods Regulation when predetermined conditions are similar, the embrittlement temperature can be used to predict the behavior of the low temperature plastic material. Brittle temperature test is used to measure the loss of toughness polymer Was "glassy" temperature.

Plastics - Determination of temperature impact embrittlement law

1 Scope

This standard specifies the method under standard ambient temperature at the measurement temperature embrittlement damage non-rigid plastic impact occurs under specific conditions. press According to test different types of aircraft and the sample is divided into two methods, namely,

--- Type A and type A tester samples A law;

--- B-type tester and B sample B method.

The standard statistical method derived brittle temperature. Because you want to calculate

the brittle temperature on a statistical basis, it is necessary to prepare a sufficient sample Goods. Statistical techniques have been used to define measured as 3.1 embrittlement temperature.

This standard determines the embrittlement temperature of the sample was 50% damaged. The standard specification for the development of the material is more useful rather than measuring timber the lowest temperature material. When used in material specifications, the measurement accuracy of the measured value is not greater than $\pm 5\text{ }^{\circ}\text{C}$.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 2918-1998 standard plastic sample conditioning and environmental tests (idt ISO 291:1997) GB/T 11547-2008 plastic resistant to liquid chemical reagent performance measurement (ISO 175:1999, MOD) ASTM D746:2007 assay brittle transition temperature of the impact of plastics and elastomers

3 Terms and Definitions

The following terms and definitions apply to this standard.

T50

Under specified test conditions, the temperature of the specimen was damaged 50%.

Punch testing machine and fixed in the fixture relative velocity between the specimen.

Principle 4

The sample was immersed in a cantilever fixed precise temperature heat transfer medium, according to a predetermined time after the state regulator to regulate in a fixture Fixed rate single punch swing impact test specimens. Test a sufficient number of samples used to calculate the statistical theory of brittle temperature. 50% of the sample at break Temperature is the brittle temperature.

5 Instruments

5.1

A type tester

Test samples from the machine jig and punch and mechanically connected components, in

order to ensure proper installation of these components can punch at a relatively constant Under the impact of the sample rate. Figure 1 shows the relationship between the size of A-type test machine punch and clamp assembly, Figure 2 is installed on the sample type A sample holder with Figure 3 is a detailed description of A-type test machine punch and the sample holder.