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

GB/T 22567-2008

**Electrical insulating materials -- Methods of test for the
determination of the glass transition temperature**

电气绝缘材料 测定玻璃化转变温度的试验方法

(English Translation)

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Foreword

This standard is identical with IEC 61006:2004 "Standard Test Method for Determination of electrical insulating materials glass transition temperature." for ease of use, this standard and IEC 61006:2004 compared to do the following editorial changes.

- Deleted international standard "Preface" and "Introduction";
- The main contents of the standard IEC 61006:2004 for description of the difference.
- In IEC 61006:2004 in the 5.4 and 6.3, the melting point of the source of reference material were marked, and in the final standard A list of references in this standard delete this part.
- In IEC 61006. There is a text of the note of 5.7 in 2004, says "according to ISO/FDIS11403-2 [2], recommended to re-add Heat rate of 10K/min ", delete the contents of this standard.

Appendix A of this standard is an informative annex.

The standard proposed by China Electrical Equipment Industrial Association.

This standard by the National Standardization Technical Committee evaluation of electrical insulating materials and systems centralized (SAC/TC301).

This standard was drafted. Guilin Institute of Electrical Science.

1 Scope

This standard specifies the test method for the glass transition temperature of the procedures of solid insulating materials. It is suitable for containing amorphous material or Partially crystalline materials amorphous domains. In the glass transition region, these materials should be stable and not decompose or sublime.

2 Terms and definitions

The following terms and definitions apply to this standard.

In the amorphous material partially crystalline or amorphous domain of materials, the viscous flow state or rubbery state into a rigid state (or vice versa) A physical change.

Note: The glass transition typically occurs within a relatively narrow temperature range, similar to the liquid solidified into a glassy state process, but this is not a first order transition.

In this temperature range, not only hardness and friability changed dramatically, and other properties, such as thermal expansion coefficient and heat capacity has been changed dramatically.

This phenomenon is called second order transition, rubbery state into a rubber-like transition. For the occurrence of one or more amorphous transition in the material case, through Often, wherein the molecular motion of the main segments of the relevant transition or change accompanied by a great performance changes seen glass transition. Amorphous materials the feed mixture may have more than one glass transition, each transition associated with the relevant individual components of the mixture.

The temperature at the midpoint of the glass transition temperature range occurs.

Note: The temperature change significantly by observing certain electrical, mechanical, thermal or other physical properties when. It can be easily measured glass transition change. Further, since the observation of selected test performance and technical details (such as heating rate, frequency of testing, etc.), observed that temperatures may There are significant differences. Therefore, the observed T_g should be considered only an approximation, and only a specific test conditions and effective technology.

DSC

When the test material and reference substance at a programmed temperature measurement technology is lost to the energy difference between the temperature of the test material and reference material relationship Surgery. Recording data is differential scanning calorimetry curve, i.e. DSC curve.

Note: The test is recorded as differential scanning calorimetry or DSC curve.

DTA

When the test and reference material was placed in the same environment at the programmed temperature, the temperature difference between the measuring and reference material under test substance Technology temperature dependence. The recorded data is the differential thermal curve, namely DTA curve.

Note 1: The test method of differential thermal analysis or DTA curve.

Note 2: Four of the glass transition temperature of the relevant characteristics (see FIG. 1).

Extrapolated onset temperature (T_f), the °C --- transition curve, the slope of the tangent point of the largest pre-transition baseline with the extrapolated intersection.

Extrapolations end temperature (T_e), °C --- transformation curve after the maximum slope of the tangent of the point of intersection with the transition extrapolated baseline.

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