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

GB/T 19466.1-2004

**Plastics -- Differential scanning calorimetry (DSC) -- Part 1:
General principles
(English Translation)**

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Foreword

GB/T 19466 Plastics - Differential Scanning Calorimetry (DSC) consists of the following 7 parts:

- Part 1: General Principles;
- Part 2: Determination of Glass Transition Temperature;
- Part 3: Determination of Temperature and Enthalpy of Melting and Crystallization;
- Part 4: Determination of Specific Heat Capacity;
- Part 5: Determination of Polymerization Temperature and/or Times and Polymerization Kinetics;
- Part 6: Determination of Oxidation Induction Time;
- Part 7: Determination of Crystallization Kinetics.

This Part belongs to Part 1 of GB/T 19466.

This Part equivalently adopts ISO 11357-1:1997 Plastics - Differential Scanning

Calorimetry (DSC) - Part 1: General Principles.

This Part equivalently translates ISO 11357-1:1997.

For the benefit of use, this Part made the following editorial modifications:

- a) Modify "this International Standard" into "this Standard";
- b) Delete the foreword of the international standard;
- c) Replace the international standards listed in the Normative References by the corresponding national standards that are equivalently modified by China;
- d) Number the formulas in the standard as per the formulation requirements of China's national standard;
- e) Give necessary note to the symbols in the formulas;
- f) Take bibliography as different informative element of the annex instead of as annex.

The Annexes A and B of this Part are informative.

This Part was proposed by China Petroleum and Chemical Industry Association.

This Part shall be under the jurisdiction of Subcommittee of General Method and Product under National Technical Committee for Standardization of Plastics (TC15/SC4).

Drafting organization of this Part: China National Petroleum Corporation Daqing Petrochemical Company.

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China Petroleum & Chemical Corporation Maoming Ethylene Company; and Shanghai Precision Scientific Instrument Co., Ltd.

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This Part was first-time formulated.

Plastics - Differential Scanning

Calorimetry (DSC) - Part 1: General Principles

WARNING -The use of this Standard may involve hazardous materials, operations and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate health and safety practices and to determine the applicability of regulatory limitations prior to use.

1 Scope

This Part of GB/T 19466 specifies a method for the thermal analysis of polymers such as thermoplastics and thermosetting plastics, including moulding materials and composite materials, using differential scanning calorimetry (DSC).

This Part is applicable to the various determinations can be made on polymers by using differential scanning calorimetry. These determinations are dealt with in Parts 2 to 7 of GB/T 19466.

2 Normative References

The provisions in following documents become the provisions of this Part through reference in this Part of GB/T 19466. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Part, however, parties who reach an agreement based on this Part are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 2918-1998 Plastics - Standard Atmospheres for Conditioning and Testing

(idt ISO 291:1997)

3 Terms and Definitions

For the purposes of this Part of GB/T 19466, the following terms and definitions apply.

3.1 Differential scanning calorimetry (DSC)

A technique in which the difference between the heat flux (power) into a test specimen

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