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

GB/T 1632.3-2010

Replacing GB/T 1841-1980

**Plastics -- Determination of the viscosity of polymers in dilute
solution using capillary viscometer -- Part 3: Polyethylenes and
polypropylenes**

塑料 使用毛细管黏度计测定聚合物稀溶液黏度 第3部分：聚乙烯和聚丙烯

(English Translation)

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Foreword

GB/T 1632 "plastic using a capillary viscometer polymer dilute solution viscosity" is divided into the following parts.

- Part 1. General;
- Part 2. PVC resin;
- Part 3. polyethylene and polypropylene;
- Part 4. polycarbonate molding and extrusion materials;
- Part 5. homopolymer and copolymer thermoplastic polyester (TP);
- Part 6. methyl methacrylate polymer.

This section GB/T 1632 Part 3.

The partial modification of the use of ISO 1628-3. Part 3 "plastic viscosity using a capillary viscometer dilute polymer solution 2001 Score. polyethylene and polypropylene "(in English).

This section according to ISO 1628-3:2001 redrafted.

This part of ISO 1628-3:2001 main technical differences are as follows.

- Increased Normative references GB/T 8170 (see 2 and 8.2)
- Increased solvent filtration requirements (see 4.1 and 5.11);
- Increasing the main technical requirements table, viscometer using the ISO 3105 tables B.4 of 0B type or table B.9 Ubbelohde type of 0aDIN Viscometer (see 5.1 and Table 1);
- Changed the way high-temperature filtration Ubbelohde viscometer (see Figure 1);
- Mechanical mixing heating appliance solution preparation (see 5.8 and 7.4.3) is used;
- Increase the solution transfer procedure (see 7.5.1);

--- Increased as the solution does not filter, required to indicate in the report the requirements [see 7.5.1 and Chapter 9, f)].

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

--- Remove the ISO 1628-3:2001 Foreword;

--- Increase the national standard foreword;

--- To ISO 1628-3:2001 international standard referenced with the international standard has been adopted as the standard instead of the corresponding country, not Direct reference to international standards for our standards.

This Part replaces GB/T 1841-1980 "Test Method resin dilute solution viscosity polyolefins." this part of GB/T 1841-1980 main technical differences are as follows.

--- Viscometer using the ISO 3105:1994 in Table B.4 of 0B type or table B.9 of 0aDIN type Ubbelohde viscometer, a major increase Technical Requirements Table (5.1 and Table 1);

--- Solution to be filtered, using a high temperature Ubbelohde viscometer (Figure 1);

--- Mechanical mixing heating appliance solution preparation (5.8 and 7.4.3) is used;

--- Solvent volume calculated using the formula (7.4.1, 7.4.3);

--- Increased as the solution does not filter, required to indicate in the report the requirements [7.5.1 and Chapter 9, f)].

This part is proposed by the China Petroleum and Chemical Corporation.

This part of the National Standardization Technical Committee plastic resins and petrochemical products Club (SAC/TC15/SC1) centralized.

This section is responsible for drafting unit. China Petroleum & Chemical Corporation North of Beijing Yanshan Branch hospital.

Participated in the drafting of this section. Beijing Eastern Petrochemical Co. additives Plant, Wuxi-kun Chemical Co., Ltd., Shanghai Chemical Industry Institute Study Institute, Chinese Academy of Qilu Qilu Company.

1 Scope

This section GB/T 1632 provides for reduced viscosity of polyethylene and polypropylene at 135 °C dilute solution (also known as viscosity number) and intrinsic viscosity Method for the determination of the degree.

This section applies to polyethylene and polypropylene materials.

Additives present in the sample may be a polymer dilute solution viscosity measurements impact. If the sample with fillers or other Additives, viscosity measurement results by this

method is not reliable.

Note: The reduced viscosity, also known as the Staudinger function (J_v), also known as intrinsic viscosity Staudinger index (J_g).

2 Normative references

The following documents contain provisions which, through reference to GB/T 1632 to the present, constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 1632.1-2008 plastic using a capillary viscometer dilute polymer solution viscosity - Part 1. General (ISO 1628-1:1998, IDT) GB/T 8170 repair value expressed about the rules and limit values and judgment ISO 3105:1994 glass capillary viscometer motion specifications and procedures Principle 3 the solvent flow time and a predetermined concentration of the polymer solution was measured at 135 °C. According to these measurements of flow time and the polymer A known concentration of the solution viscosity and calculation of viscosity inherent characteristics.

At room temperature, polyethylene and isotactic polypropylene insoluble in any currently known solvent. Therefore, measures must be taken to prevent the test Caused by precipitation of the polymer solution concentration is changed.

4.1 Decahydronaphthalene

Analytical reagent. At a temperature not higher than 65 °C and pressure of about 500Pa conditions for re-distillation. It should take appropriate methods to prevent decahydronaphthalene the oxidation reaction occurred, for example, under the conditions of existence of hydroquinone distillation.

Redistilled immediately after the completion of adding antioxidants to prevent the oxidation of polymer solution viscosity, measured at, the mass fraction of antioxidant 0.2% for antioxidants are.

- 4,4 'vulcanization - bis (3-methyl-6-tert-butyl) phenol;
- Bis (2-hydroxy-3-tert-butyl-5-methyl) phenyl methane;
- Octadecyl-3 (3 ', 5'-di-butyl-4'-phenyl) n-propyl;
- Tetrakis [methylene-3- (3 ', 5'-di-t-butyl-4'-hydroxyphenyl) n-propyl] methane.