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

GB/T 25278-2010

**Plastics -- Determination of the fluidity of plastics using
capillary and slit-die rheometers**

塑料 用毛细管和狭缝口模流变仪测定塑料的流动性

(English Translation)

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Foreword

This revised standard adopts ISO 11443:2005 "Plastics - Determination of the capillary and slit die rheometer plastic liquidity" (In English).

This standard and ISO 11443:2005 is the main technical difference.

--- Chapter 2 adds normative references. GB/T 6379.2-2004;

--- Chapter 9 to the precision of the data, the ISO 11443:2005 as the precision of the standard informative Appendix D.

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

--- Remove the ISO 11443:2005 Foreword;

--- Increase the national standard foreword;

--- Of ISO 11443:2005 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.

The Standard Appendix A, Appendix B, Appendix C and Appendix D is an informative annex.

The standard proposed by China Petroleum and Chemical Corporation.

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

1 Scope

This standard specifies in plastics processing shear rate and temperature conditions, the method of determination of melt flow shear stress.

As the plastic melt flow depends not only on temperature but also on other parameters, in particular shear stress and shear rate, thus establishing this method is necessary.

This standard applies to the determination of the melt viscosity range of $10\text{Pa} \cdot \text{s} \sim 107\text{Pa} \cdot \text{s}$, depending on the pressure measurements and (or) force sensor Mechanical and physical properties as well as the range of the rheometer, shear rate range of extrusion rheometer produced for $1\text{s}^{-1} \sim 106\text{s}^{-1}$.

Effects of drawing die entrance cause the die exit die swell, this standard also includes a method for assessing extrudate swell.

This standard relates to rheological testing technology is not limited to thermoplastics characterized wall adhesion, if the thermoplastic plastic "wall slip" effect Material [1], [2], it can be applied to characterize thermosets. This standard does not apply to non-wall shear rate and shear viscosity of the adhesive material used in the determination but these can be used to characterize the rheological behavior of a certain geometry of the flow channel.

Note: The test can not occur during the curing reaction.

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 3505-2009 Geometrical product specifications (GPS) Surface texture Profile method - Terms, definitions and structure parameters (ISO 4287:1997, IDT) GB/T 3682-2000 quality thermoplastic melt flow rate and melt volume flow rate measurement (idtISO 1133.

1997)

Test Method. GB/T 4340.1-2009 Vickers hardness test - Part 1 (ISO 6507-1:2005, MOD)
GB/T 6379.2-2004 measurement methods and results of Accuracy (trueness and precision)
- Part 2. Determination of the standard measurement direction Method repeatability and reproducibility of the basic method (ISO 5725-2:1994, IDT) ISO 11403-2:2004 Plastics obtain comparable and represents the second part of the multi-point data. Thermal and processing properties

3 Terms and Definitions

The following terms and definitions apply to this standard.

Newtonian fluid Newtonianfluid Fluid viscosity is not dependent on shear rate and time.

Non-Newtonian fluid non-Newtonianfluid Viscosity with shear rate and (or) time varies fluid.

Note: Non-Newtonian fluid as defined in this standard refers only to changes in viscosity with shear rate of the fluid.