



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

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**Plastics - Resins in the liquid state or as emulsions or
dispersions - Determination of apparent viscosity using a
single cylinder type rotational viscometer method**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

The translation method used in this document is equivalent to the ISO 2555.2018 "Plastic Liquid or Emulsion or Dispersion System Resins Single Cylinder Spinning

Determination of Apparent Viscosity by Turning a Viscometer."

This document was proposed by the China Petroleum and Chemical Industry Federation.

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1 Scope

This document specifies the method for measuring the apparent viscosity of liquid resin with a single-cylinder rotary viscometer.

The viscosity measurement range of this method. 0.02Pa.s~60000Pa.s.

This document applies to Newtonian fluids and non-Newtonian fluids, and the apparent viscosity of the measured liquid depends on the velocity gradient during the measurement.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

The following terms and definitions apply to this document.

ISO and IEC maintain terminology databases at the following websites.

3.1

Singlecylindertyperotationalviscometer

Determine the viscosity by measuring the torque acting on the surface of a single rotating cylinder or disc at a constant angular velocity in a laminar flow state

Device.

3.2

Rotor spindle

Rotatable coaxial objects such as cylinders or discs connected to a vertical rotation axis.

3.3

Apparentviscosity

Use a predetermined calibration table to determine the viscosity of the liquid/fluid based on the measured torque.

Note. For non-Newtonian fluids, the apparent viscosity depends on the shear rate. With these types of viscometers, the speed gradient at each point of the rotor is different. because

Therefore, for non-Newtonian fluids, the result is not strictly "known true viscosity", so it is usually called apparent viscosity.

4.1 General

The coaxial rotor rotates at a constant speed in the measuring liquid.

The resistance exerted by the liquid on the spindle depends on the viscosity of the liquid, and the resulting torque is measured by an appropriate device.

The method of measuring the apparent viscosity using a single-cylinder rotary viscometer is to multiply the torque reading by a coefficient related to the rotor speed and characteristics.