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ISO 1133:2005 Plastics - Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics

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Abbreviation

ISO 1133:2005

Valid from

07/06/2005

Information provider

Standards New Zealand

Author

International Organization for Standardization

Information type

ISO Standard

Format

PDF

Cited By

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Description

This International Standard specifies two procedures for the determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastic materials under specified conditions of temperature and load.

Scope

This International Standard specifies two procedures for the determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastic materials under specified conditions of temperature and load.

- Procedure A is a mass-measurement method.
- Procedure B is a displacement-measurement method.

Normally, the test conditions for measurement of melt flow rate are specified in the material standard with a reference to this International Standard. The test conditions normally used for thermoplastics are listed in Annexes A and B.

The MVR will be found particularly useful when comparing materials of different filler content and when comparing filled with unfilled thermoplastics. The MFR can be determined from MVR measurements provided the melt density at the test temperature and pressure is known.

These methods are in principle also applicable to thermoplastics for which the rheological behaviour is affected during the measurement by phenomena such as hydrolysis, condensation or crosslinking, but only if the effect is limited in extent and only if the repeatability and reproducibility are within an acceptable range. For materials which show significantly affected rheological

behaviour during testing, these methods are not appropriate. In such cases, the use of the viscosity number in dilute solution, determined in accordance with the relevant part of ISO 1628, is recommended for characterization purposes.

Note: The rates of shear in these methods are much smaller than those used under normal conditions of processing, and therefore data obtained by these methods for various thermoplastics may not always correlate with their behaviour during processing. Both methods are used primarily in quality control.

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- [AS/NZS 4129:2008](#)

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- [AS/NZS 5065:2005](#)

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