

ISO 1133-1:2011-12 (E)

Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 1: Standard method

Contents		Page
	Foreword	iv
	Introduction	v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle	2
5	Apparatus	3
5.1	Extrusion plastometer	3
5.2	Accessory equipment	7
6	Test sample	8
6.1	Sample form	8
6.2	Conditioning	8
7	Temperature verification, cleaning and maintenance of the apparatus	9
7.1	Verification of the temperature control system	9
7.2	Cleaning the apparatus	10
7.3	Vertical alignment of the instrument	10
8	Procedure A: mass-measurement method	10
8.1	Selection of temperature and load	10
8.2	Cleaning	10
8.3	Selection of sample mass and charging the cylinder	10
8.4	Measurements	11
8.5	Expression of results	12
9	Procedure B: displacement-measurement method	13
9.1	Selection of temperature and load	13
9.2	Cleaning	13
9.3	Minimum piston displacement distance	13
9.4	Selection of sample mass and charging the cylinder	13
9.5	Measurements	13
9.6	Expression of results	14
10	Flow rate ratio	15
11	Precision	16
12	Test report	16
	Annex A (normative) Test conditions for MFR and MVR determinations	18
	Annex B (informative) Conditions specified in International Standards for the determination of the melt flow rate of thermoplastic materials	19
	Annex C (informative) Device and procedure for preforming a compacted charge of material by compression	20
	Annex D (informative) Precision data for polypropylene obtained from an intercomparison of MFR and MVR testing	23
	Bibliography	24