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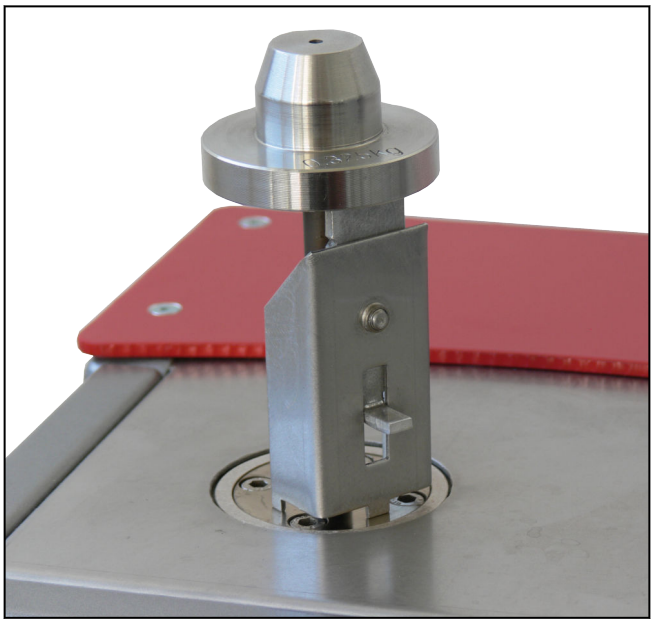
Product Information

Cflow extrusion plastometer

CTA: 45355 45362



Applications

Cflow is a compact instrument for rapid checking of the melt mass flow rate of plastics as per Method A.

It is primarily designed for plastics processors with a less frequent need for extrusion tests and no requirement for connection to a PC.

Cflow is intended for MFR tests to Method A. Tests can be performed in accordance with the following standards:

- Method A as per ISO 1133, ASTM D1238, ASTM D3364, JIS K 7210.

The instrument can quickly be checked using the test granulate included in delivery. It is also possible to check the temperature in the extrusion barrel and the diameter of dies and barrels using plug gauges.

Advantages and features

- Temperature control of the heating elements, heating chamber and barrel are all perfectly co-ordinated. The temperature is generated at the location where it is utilized, ensuring excellent temperature distribution over the whole barrel height from the outset.
- Simplified cleaning, with rapid expulsion of residual specimen material.
  - The die plug is located on the underside of the extrusion barrel. Removing the die plug frees the die to move downwards, allowing it to be removed easily.
  - Expelling the die plus residual material after the test is similarly fast and easy. The barrel is now accessible throughout., simplifying cleaning.
- The optionally available test weight support allows you to retain the test weight in the pre-heating position.
- Comprehensive accessory range including automatic or manual extrudate cutter, separating pane and die plug is optionally available.

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Technical data

Basic instrument

It is not possible to connect the instrument to a PC.

Type Item No.	Cflow extrusion plastometer (230 V) 004949	Cflow extrusion plastometer (110 V) 004950	
Test load	0.325 to 21.6	0.325 to 21.6	kg
Dimensions			
Height with all weights	850	850	mm
Width	330	330	mm
Depth	395	395	mm
Approx. weight	18	18	kg
Test temperature	+120 to +400	+120 to +400	°C
Display	two-line set/actual temperature display, backlit	two-line set/actual temperature display, backlit	
Temperature display resolution	<0.1	<0.1	K
Temperature accuracy between 0 and 75 mm above the die in temperature range 190°C to 300°C	<0.3[1)]	<0.3[1)]	K
Error limit for time measurement (Method A)	± 0.02 (with automatic extrudate cutter)	± 0.02 (with automatic extrudate cutter)	s
Included in delivery:	• test weights for load levels 325 g and 2.16 kg • hopper • cleaning accessories (cleaning piston, cleaning brush, cleaning pads (500x)) for barrel • test granulate and filling chute for granulate		
Power input specifications			
Power supply	220 to 240 V, 1L/PE/N	100 to 127 V, 1L/PE/N	
Power consumption (full load), approx.	0.6	0.6	kVA
Power frequency	50/60	50/60	Hz

1) for distance and time, complies with ISO 1133-2

Accessories required

Extrusion barrels (1 x required)

At least one extrusion barrel must be selected, in accordance with the materials to be tested. Various plastics (e.g. PTFE and PFA) which contain fluorine release hydrofluoric acid, which attacks the extrusion barrel material. For these plastics extrusion barrels made of a special steel alloy are used. These extrusion barrels have only limited suitability for filled plastics. For these the wear-resistant version is recommended.

Test material	Inside diameter [mm]	Hole	Properties	Item no.
Plastic, fluorine free	9.55	Finely honed	Wear resistant	001331
Plastic, containing fluorine / fluorine free	9.55	finely honed	acid-resistant	001345

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Piston (1 x required)

At least one piston must be selected, in accordance with the materials to be tested. Various plastics (e.g. PTFE and PFA) which contain fluorine release hydrofluoric acid, which attacks the extrusion barrel material. For these plastics pistons made of a special steel alloy are used. These pistons have only limited suitability for filled plastics. For these the wear-resistant version is recommended. For tests to ISO 1133-1997, a piston with non-rounded edges (sharp-edged) is required.

Test material	Standard	Test load [kg]	Properties	Item no.
Plastic, fluorine free	ISO 1133	0.325	Wear resistant	001336
Plastic, contains fluorine	ISO 1133	0.325	Resistant to acid	001340
Plastic, fluorine-free	ISO 1133 (1997)	0.325	sharp edges, wear-resistant	001350
Plastic, fluorine free	ASTM D1238	0.325	Wear resistant, Generation 1	1007541
Plastic, fluorine free	ASTM D 1238	0.325	Wear-resistant, generation 2, with guide sleeve	1067173

Dies (scope of supply 2 pieces, 1 x required)

At least one die pair must be selected. It should suit the materials to be tested. Scope of delivery: 2 pieces + cleaning rod.

Item No.	312342	325554	001351	092326	
Material	Sintered material	Sintered material	Sintered material	Sintered material	
Test material	Plastic, containing fluorine, without fluorine	Plastic, containing fluorine, without fluorine	Plastic, containing fluorine, without fluorine	PVC	
Standard	ISO 1133 and ASTM D1238	ISO 1133 and ASTM D1238 Method C	BS 2782-7, Method 720A-1997	ASTM D3364	
Dimensions:					
Length	8	4	8	25.4	mm
Inner diameter	2.095	1.05	1.18	2.095	mm
Properties	Wear resistant, resistant to acid	Wear resistant, resistant to acid	Wear resistant, resistant to acid	Wear resistant, resistant to acid	

Optional accessories

Weights

The extrusion plastometer can be fitted with weights according to the plastic in use. 2.16 kg is already included in delivery with the basic instrument.

Test load [kg]	Required for this:	Item no.
5	-	001380
5/10	-	001381
5/10/15/21.6	-	001443
1	-	001385
1.05	-	001386

All data at ambient temperature.

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Test load [kg]	Required for this:	Item no.
1.2	-	001387
3.8	-	001459
12.5	weights with 5/10kg test loads (Item No. 001381)	001389
(ASTM D3364) 20	weights with 5/10/15/21.6 kg test loads (Item No. 001443)	008077

Weight support

Description	Item number
Weight support for retaining the weights in the preheating position, can be adjusted steplessly with setting marks at 50, 60, and 70 mm.	**026875**

Separating pane

Description	Item number
Separating pane for automatic extrudate cutter, for collecting individual extrudates	**001379**
Separating pane for manual extrudate cutter, for collecting individual extrudates	**004996**

Die plug

The die plug prevents premature outflow of the material when plastics with high flow-rates (> 10 cm^3/10 min at load 0.375 kg) are being tested. When the die plug is in use, an extrudate cutter is required in order to eject the die plug automatically when the test begins.

Description	Item number
Die plug	
Die plug for testing plastics with high flow-rate; ceramic plug included[1)]	**012728**

1) Required: 1x extrudate cutter

All data at ambient temperature.