CHILL Karakteriseerlab: voor onderzoek naar de eigenschappen van plastics

Hoe vormvast of krasbestendig is een autobumper? En hoeveel slagkracht kan een veiligheidshelm verdragen? In het Karakteriseerlab van CHILL kunnen dit soort fysische eigenschappen van plastics en rubber worden ondergezocht. Kennis van aspecten als slagsterkte, trek- en vloeigedrag helpt bij de bepaling van hoe materialen het best kunnen worden verwerkt en toegepast. In het lab kan worden gekarakteriseerd op grondstoffen, halffabrikaten en eindproducten. Dat kunt u zelf doen. Of, als u dat wil, met hulp van researchers en/of studenten van CHILL.

Chemelot Innovation and Learning Labs

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NEW CONNECTIONS • NEW SOLUTIONS

Karakteriseren

Zwick Material Testing Machine

AllroundLine 20 kN Z020TH Allround-line Table-Top Machine

Nominal force 20kN
Test area (W*H) 440 * 1430 mm
Test speed 0.0005…1000mm/min
Return speed 1500mm/min

1. Tensile tests on plastics
2. Testing the frictional behaviour of plastic foils

Pendulum Impact Tester HIT 5.5P

Application range and standards

Method	**DIN**	**ISO**	**ASTM**
Charpy	50115	179-1	D 6110
		179-2	
Izod		180	D 256 (notched)
			D 4812 (un-notched)

NOTCH_cutting machine ZN0

The Zwick ZNO notch cutting machine is used to notch plastic specimens in accordance with the standards ASTM D 256, ASTM D 6110, EN ISO 179, EN ISO 180, and EN ISO 8256 (Charpy and Izod tests).

Hardness Tester to Shore analogue

Device	Zwick 3130 (Shore A)	Zwick 3131 (Shore D)
Indentor	Truncated cone	Cone
	Opening angle 35°	Opening angle 30°
Contact force	12.5 N	50 N
Spring force	8.065 N	44.5 N
Range of application	Soft rubber	Hard rubber
	elastomers	acrylic glass
	natural rubber	polystyrene,
	PVC soft	rigid thermo-plasts

Karakteriseren

Rockwell Hardness Tester ZHR 4150 AK

Type		**ZHR4150AK**	**Unit**
Item number		**389921**	
Test method		Rockwell	
Load	Pre-load	10	kgf
	Test load	60, 100, 150	kgf
Pre-load		setting with optical and acustic support	
Load control		automatic load application, holding and removal	
Load application		via spring force	
Starting test action		automatically or manually	
Holding time		1 - 50 sec	
Data calculation		average value R calculation (display + optinally: output to a PC or printer)	
Scales		ABCDEFGHKLMPRSV	
Max height of specimen		250	mm
Max depth of specimen		150	mm

HDT/Vicat Standard

Vicat test needle
Vicat weight set, 10 & 50 N, according to ISO 306 and ASTM D 1525 (required 1x per station)
HDT test plunger
HDT Weight Set ISO 75-2 flatwise. For specimen size 4 x 10 mm (thickness x width, ± 0.05 mm)
Number of testing stations 3
Temperature range [°C] +20 ... +300

Extrusion Plastometer Mflow:

The Mflow Extrusion Plastometer in its basic version is equipped for MFR testing to Method A and can be expanded for MVR testing to Method B. Tests according to the following Standards are possible: Methods A and B to ISO 1133, ASTM D 1238, ASTM D 3364, JIS K 7210.
Test loads 0.325 up to 21.6 kg
Temperature range +50 up to +450 °C