

## CEFLEX rPE Flex – Certificate of Analysis

rPE Flex is a L(L)DPE-rich recyclate from household post-consumer packaging waste that has been processed in a Quality Recycling Process (QRP). QRP includes additional sorting, hot washing with detergents, extrusion with homogenization and degassing as well as double melt filtration and de-odourization.

### Processing advice:

The melt processing temperature should be below 220 °C.

After prolonged storage or for the manufacture of sensitive products, drying of the material prior to processing and/or the use of moisture scavenger is recommended.

PROPERTY	UNIT	VALUE	COMMENTS	TEST METHOD
<b>GENERAL</b>				
Name	-	rPE Flex		
Composition	wt%	PE min 83, PP 5-15, other 3-7	Other=thermoplastics other than PE or PP	Internal
<b>APPEARANCE</b>				
Color	-	L*48,12 a*-2,76 b* 0,50	Grey	ASTM E1164
Shape	-	Granules		
<b>PHYSICAL</b>				
Melt Flow Index (MFI)	g/10 min	0.77 2.97	2.16 kg, 190 °C 5 kg, 190 °C	ISO 1133
Density	g/cm <sup>3</sup>	0.956		ISO 1183
Ash content	wt%	< 3	after 1h - 600°C	ASTM D5630
Moisture saturation (23 °C)	wt%	0.11	after submersion (H <sub>2</sub> O, 24h)	ASTM D570
<b>MECHANICAL – injection molded test bars</b>				
Modulus	tensile MPa	450	1 mm/min	ISO 527
Tensile strength	tensile MPa	15	50 mm/min	ISO 527
Strain at break	tensile %	300	50 mm/min	ISO 527
Impact strength (notched, 23°C)	kJ/m <sup>2</sup>	37	Charpy, type A	ISO 179
<b>MECHANICAL – blown film*, specimen type 5 (Thickness= 60-65 µm)</b>				
Modulus	MD MPa TD MPa	160 150	1 mm/min	ISO 527
Tensile strength	MD MPa TD MPa	19 21	50 mm/min	ISO 527
Strain at break	MD % TD %	>700 >700	50 mm/min	ISO 527
Dart drop resistance	g/µm	1.01		ASTM D1709
Tear strength	N	4.7	200 mm/min	ISO 6383
Haze	%	93	TT C/2	ASTM D1003/8B
<b>OTHER</b>				
Bulk density	g/cm <sup>3</sup>	0.50		EN 15344

\* Film blowing with 20 mm single screw extruder, L/D = 25. Film blowing die 30 mm diameter and 1 mm die gap, Process parameters: temperature profile 170-170-190-210-210 °C, screw speed of 90 rpm and BUR=3. Film thickness 60-65 µm, each sample measured for calculations.

CoA experimentally determined by UM and CHILL labs on an industrially relevant batch.