

Supporting Information

3.1. Materials Datasheets



Data Sheet

Polypropylene – Granulate

Dipolen®PP

- modifiable at customer's request
- homogenized 24 ton- truckloads

TECHNICAL DATA:

Shape: cylindrical

Colouring: light grey, blue, green,
light green, dark red,
brown, anthracite or black

Pore Size of Filter: 180 µm

Characteristics	Test Norm	Testing Conditions	Unit	Value
Material Property Values				
Density	DIN EN ISO 1183		g/cm³	0,92
Moisture Content	Moisture Analyser (infrared)	105 °C	%	< 0,1
Ignition Residue	DIN EN ISO 1172	650 °C	%	≤ 1
Rheometrical Properties				
Melt Flow Index MFI	DIN EN ISO 1133	230 °C/2,16 kg	g/10min	≥ 11
Mechanical Properties				
Tensile Modulus	DIN EN ISO 527	1 mm/min	MPa	≥ 1100
Yield Stress	DIN EN ISO 527	50 mm/min	MPa	≥ 25
Tensile Strain	DIN EN ISO 527	50 mm/min	%	≥ 180
Charpy Impact Strength, edgewise	DIN EN ISO 179	23 °C	kJ/m²	≥ 6
Charpy Impact Strength, edgewise	DIN EN ISO 179	-23 °C	kJ/m²	≥ 2,5
Shore-Hardness	DIN 53505	Shore D		60 ± 1

Data Sheet

Polyblend PE / PP **Dipolen®S**



- modifiable at customer's request
- homogenized 24 ton- truckloads

TECHNICAL DATA:

Shape: cylindrical

 Colouring: grey, light grey, blue, green,
 dark red, brown, anthracite
 or black

Pore Size of Filter: 180 µm

Characteristics	Test Norm	Testing Conditions	Unit	Value
Material Property Values				
Density	DIN EN ISO 1183		g/cm³	0,94
Moisture Content	Moisture Analyser (infrared)	105 °C	%	< 0,1
Ignition Residue	DIN EN ISO 1172	650 °C	%	≤ 1
Rheometrical Properties				
Melt Flow Index MFI	DIN EN ISO 1133	230 °C/2,16 kg	g/10min	≥ 5
Mechanical Properties				
Tensile Modulus	DIN EN ISO 527	1 mm/min	MPa	≥ 820
Yield Stress	DIN EN ISO 527	50 mm/min	MPa	≥ 20
Tensile Strain	DIN EN ISO 527	50 mm/min	%	≥ 150
Charpy Impact Strength, edgewise	DIN EN ISO 179	23 °C	kJ/m²	≥ 6,5
Charpy Impact Strength, edgewise	DIN EN ISO 179	-23 °C	kJ/m²	≥ 2,5
Shore-Hardness	DIN 53505	Shore D		56 ± 1

Material data sheet

PP 2131 FT 90/04



Description

A filled postconsumer Polypropylen with 18% - 22% recycled talcum.

Available in black (equal to reference RAL 90 04).

Material Properties

Physical	Value	Unit	Norm
Density	1,04 – 1,06	g/cm ³	Internal method
Rheology			
Melt Flow Rate (240°C / 5.0 kg)	7,5 - 10	g/10 min	ISO 1133
Mechanical			
Tensile modulus (23°C)	1650 - 1950	MPa	ISO 527-2/1
Tensile strength (23°C)	24 - 27	MPa	ISO 527-2/50
Charpy notched (23°C)	3 - 5	kJ/m ²	ISO 179/A
Izod notched (23°C)	4 - 6	kJ/m ²	ISO 180/A

5. Thermal properties

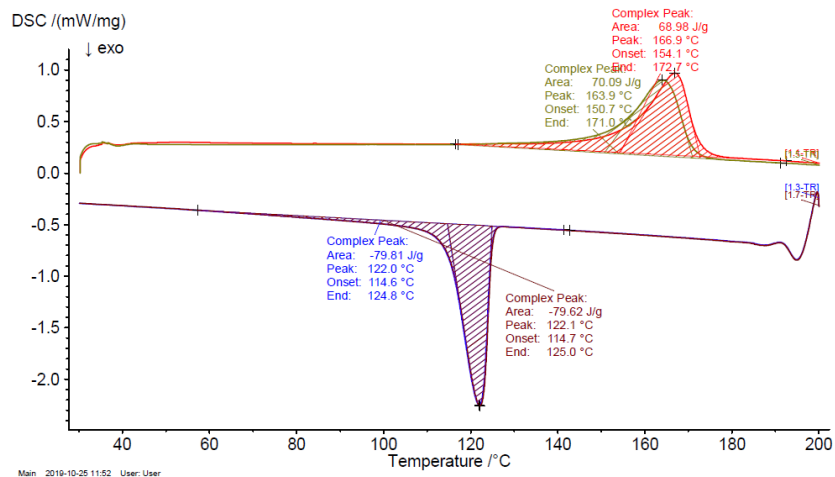


Figure S1. DSC thermograms of rF-MFC.

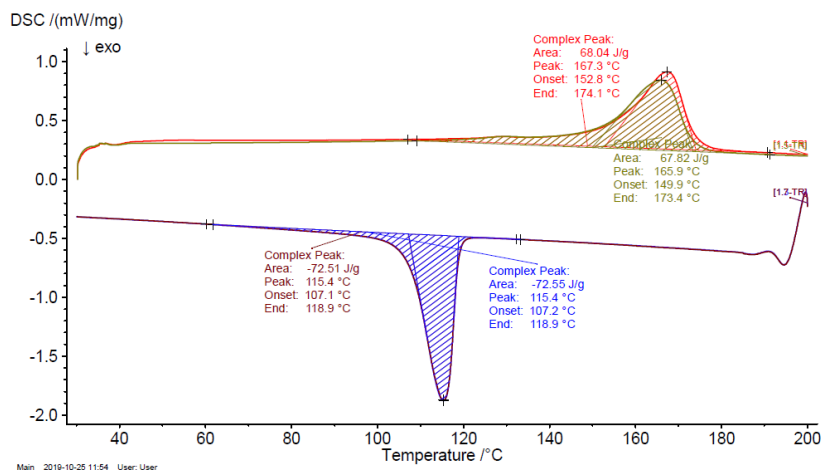


Figure S2. DSC thermograms of rFMFCPOEGMA.

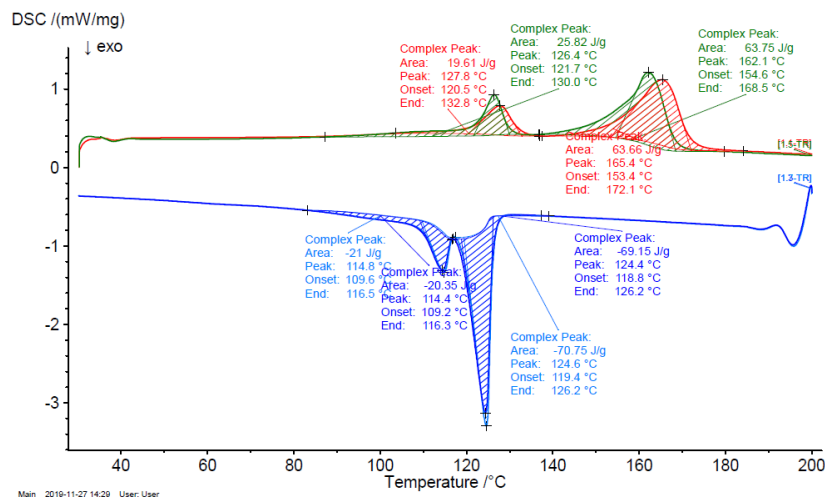


Figure S3. DSC thermograms of rMPO.

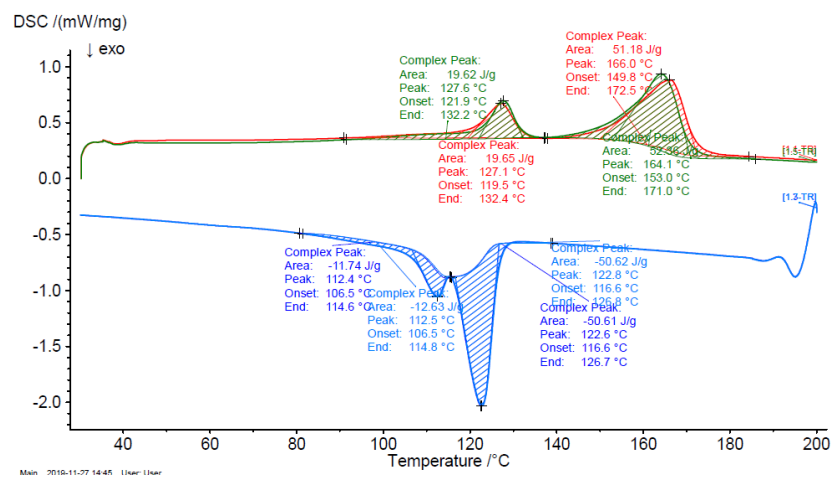


Figure S4. DSC thermograms of rMPOIMB.

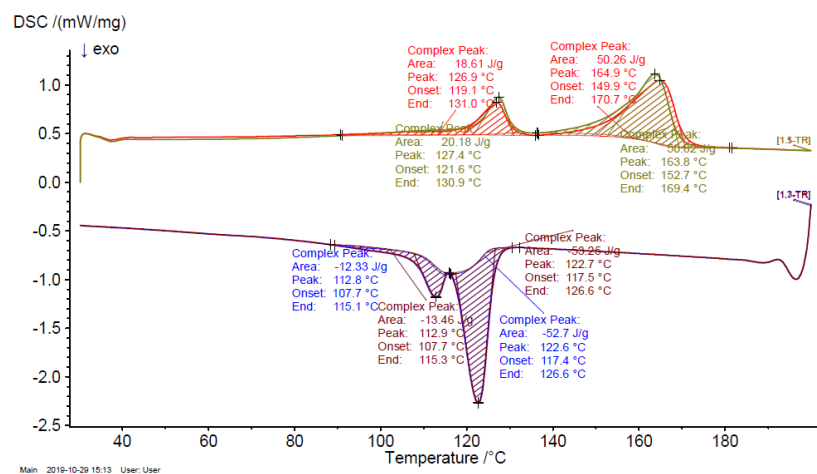


Figure S5. DSC thermograms of RMPOMFC.

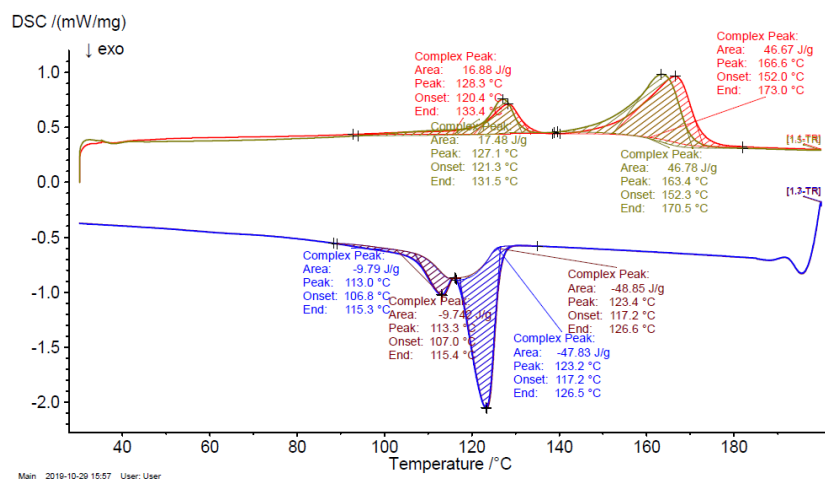


Figure S6. DSC thermograms of RMPOMFCPOEGMA

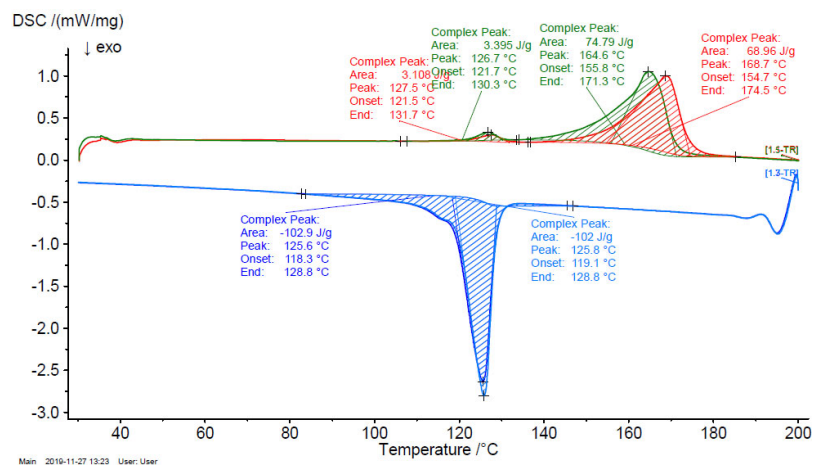


Figure S7. DSC thermograms of rPPtal pellet.

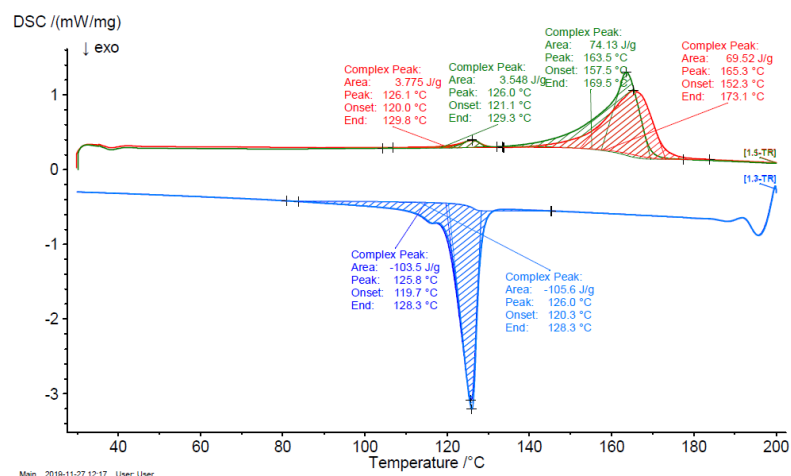


Figure S8. DSC thermograms of rPPtalC.

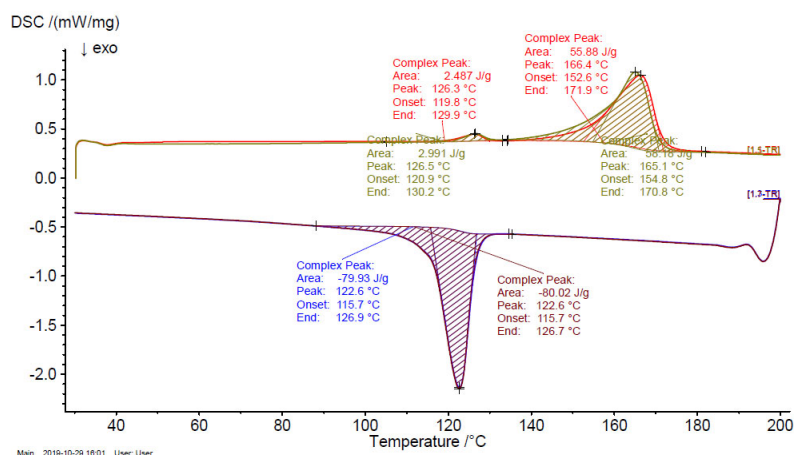


Figure S9. DSC thermograms of RPPtalCMB.

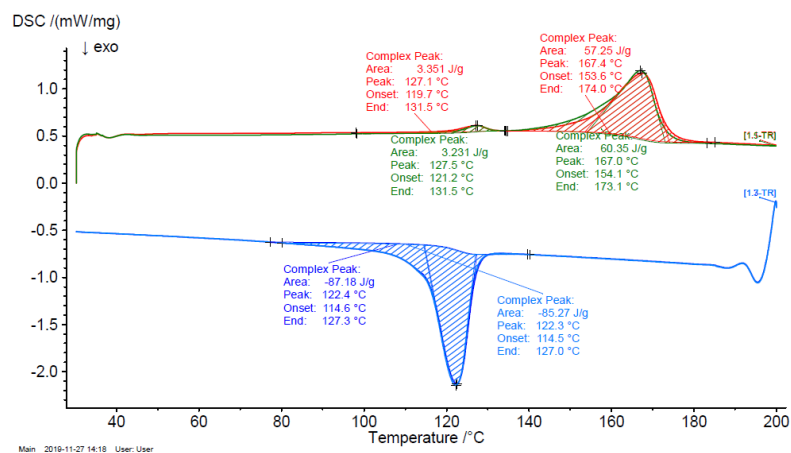


Figure S10. DCS thermograms of RPPtalCMFC.

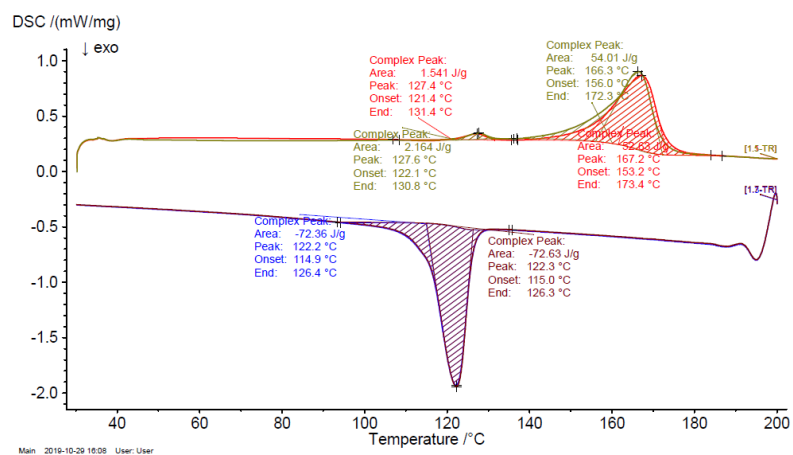


Figure S11. DSC thermograms of RPPtalcMFCPOEGMA.