

Supporting Information

Blends of Poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate) with Fruit Pulp Biowaste Derived Poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate-*co*-3-hydroxyhexanoate) for Organic Recycling Food Packaging

Beatriz Meléndez-Rodríguez¹, Sergio Torres-Giner^{1§}, Maria A.M. Reis², Fernando Silva², Mariana Matos², Luis Cabedo³ and José María Lagarón^{1*}

¹ Novel Materials and Nanotechnology Group, Institute of Agrochemistry and Food Technology (IATA), Spanish Council for Scientific Research (CSIC), Calle Catedrático Agustín Escardino Benlloch 7, 46980 Paterna, Spain; beatriz.melendez@iata.csic.es

² UCIBIO-REQUIMTE-Applied Molecular Biosciences Unit, Chemistry Department, Faculty of Sciences and Technology, New University of Lisbon, 1099-085 Lisbon, Portugal; amr@fct.unl.pt; fra.silva@campus.fct.unl.pt; m.matos@campus.fct.unl.pt

³ Polymers and Advanced Materials Group (PIMA), Universitat Jaume I (UJI), 12071 Castellón, Spain; lcabedo@uji.es

§ This author is currently with the Research Institute of Food Engineering for Development (IIAD), Universitat Politècnica de València (UPV), Camino de Vera s/n, 46022 Valencia, Spain; storresginer@upv.es

* Correspondence: lagaron@iata.csic.es; Tel.: +34-963-900-022

Table S1. DSC parameters of the thermo-compressed films made of poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate) (PHBV) and poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate-*co*-3-hydroxyhexanoate) [P(3HB-*co*-3HV-*co*-3HHx)] in terms of: glass transition temperature (T_g), melting temperature (T_m), enthalpy of melting (ΔH_m), crystallization temperature (T_c), enthalpy of crystallization (ΔH_c), cold crystallization temperature (T_{cc}), and enthalpy of the cold crystallization (ΔH_{cc}).

Film	First heating				Cooling				Second heating			
	T_g	T_m	ΔH_m	T_{c1}	T_{c2}	ΔH_{c1}	ΔH_{c2}	T_g	T_{cc}	ΔH_{cc}	T_m	ΔH_m
	(°C)	(°C)	(J/g)	(°C)	(°C)	(J/g)	(J/g)	(°C)	(°C)	(J/g)	(°C)	(J/g)
PHBV	1.7 ± 0.2 ^a	177.6 ± 3.1 ^a	74.4 ± 8.0 ^a	-	122.7 ± 2.1 ^a	-	81.6 ± 1.7 ^a	1.6 ± 0.1 ^a	-	-	174.5 ± 3.7 ^a	85.2 ± 6.7 ^a
PHBV90 /	1.4 ± 0.3 ^a	169.3 ± 2.4 ^b	74.4 ± 9.4 ^a	-	119.2 ± 0.3 ^b	-	74.4 ± 3.6 ^b	1.2 ± 0.2 ^a	-	-	170.4 ± 0.1 ^a	76.4 ± 3.9 ^a
P(3HB- <i>co</i> -3HV- <i>co</i> -3HHx)10												
PHBV75 /	0.7 ± 0.2 ^b	170.6 ± 0.4 ^b	68.2 ± 6.2 ^a	-	115.1 ± 0.1 ^{c,d}	-	64.4 ± 2.7 ^c	0.6 ± 0.1 ^b	-	-	168.1 ± 0.1 ^b	65.5 ± 4.3 ^b
P(3HB- <i>co</i> -3HV- <i>co</i> -3HHx)25												
PHBV50 /	0.6 ± 0.1 ^b	174.4 ± 0.9 ^a	43.2 ± 5.4 ^b	-	118.9 ± 2.0 ^{b,d}	-	50.8 ± 2.3 ^d	0.5 ± 0.1 ^b	-	-	166.6 ± 3.3 ^b	50.5 ± 2.1 ^c
P(3HB- <i>co</i> -3HV- <i>co</i> -3HHx)50												
P(3HB- <i>co</i> -3HV- <i>co</i> -3HHx)	0.2 ± 0.1 ^c	110.5 ± 1.3 ^c //	33.4 ± 0.2 ^c	65.2 ± 1.2	114.4 ± 3.3 ^d	2.8 ± 0.4	6.9 ± 2.5 ^e	0.6 ± 0.1 ^b	71.5 ± 3.2	15.1 ± 1.6	119.7 ± 0.8 ^c //	24.4 ± 1.7 ^d
												168.7 ± 1.4 ^b

^{a-d} Different letters in the same column indicate a significant difference among the samples ($p < 0.05$).