

Product Selector Guide

Systems for the Production of Master Models / Plugs

RenShape® Board Materials

Product	Applications	Colour	Density g/cm ³	Coefficient of Thermal Expansion 10 ⁻⁶ K ⁻¹ ISO 11359	Heat Distortion ISO 75 °C	Flexural Strength MPa ISO 178	Compressive Strength Mpa* ISO 604	Compressive modulus MPa ISO 604	Shore-D-Hardness ISO 868
Styling and Modeling Boards									
BM 5108	Styling	White	0.08	-	-	-	-	-	-
BM 5025		Grey	0.24	60 - 70	60	5.5	3.7	140	-
BM 5185	Modeling	Apricot	0.45 - 0.50	60 - 65	60 - 70	10 - 15	10 - 15	500 - 600	-
BM 5440	Master and Data Control Models	Brown	0.50	50 - 55	75 - 80	15 - 20	15 - 20	600 - 700	55 - 60
BM 5460		Brown	0.70 - 0.73	50 - 55	75 - 80	25 - 30	25 - 30	1250 - 1350	60 - 65
Tooling Boards									
BM 5055	Prepreg Lay-up tools	Green	0.72 - 0.75	35 - 40	135 - 140	30 - 40	50 - 55	2300 - 2400	75
BM 5066	Jigs and Fixtures	Beige	1.10	55 - 60	75 - 80	55 - 60	55 - 60	2600 - 2800	75 - 80
BM 5172-1	Foundry pattern	Green	1.22	75 - 80	75 - 80	75 - 80	90 - 100	3100 - 3200	80 - 85
BM 5112-2	Hammer Forming	Grey	1.55	55 - 60	80 - 85	100 - 110	90 - 100	4800 - 5000	80 - 85
BM 5166	Jigs and Metall Sheet Forming	Ivory	1.70	45 - 50	75 - 80	55 - 65	90 - 100	7000 - 7500	85 - 90

Product	Standard bonding	Mixing ratio	Fast bonding	Mixing ratio	Repair system
RenShape® Board Bonding Adhesives and Repair					
BM 5108	RenPaste® SV 36 / HY 5162	100 : 35	RenCast® FC 52	100 : 100	XW 5184 / XW 5130
BM 5025	RenPaste® SV 427-2 / HY 5162	100 : 100	RenCast® FC 52	100 : 100	XW 5184 / XW 5130
BM 5185	RenPaste® SV 427-2 / HY 5162	100 : 100	RenCast® FC 52	100 : 100	XW 5184 / XW 5130
BM 5440	RenPaste® SV 427-2 / HY 5162	100 : 30	RenCast® FC 52	100 : 100	XW 5184 / XW 5130
BM 70	RenPaste® SV 427-2 / HY 5162	100 : 30	RenCast® FC 52	100 : 100	XW 5184 / XW 5130
BM 5460	RenPaste® SV 427-2 / HY 5162	100 : 30	RenCast® FC 52 Araldite® 2011	100 : 100	XW 5184 / XW 5130
BM 5055	Resin XB 5055 A+B	100 : 15		100 : 100	Repair with adhesive bonded insert XB 5055 A+B
BM 5066	Araldite® AW 106 / HV 953 U, Araldite® 2011	100 : 80	Araldite® AW 2101, HW 2951 Araldite® 2012	100 : 100	Repair with adhesive bonded insert Araldite® AW 2101 / HW 2951
BM 5172-1	Araldite® AW 106 / HV 953 U, Araldite® 2011	100 : 80	Araldite® AW 2101, HW 2951 Araldite® 2012	100 : 100	Repair with adhesive bonded insert Araldite® AW 2101 / HW 2951
BM 5112-2	Araldite® AW 106 / HV 953 U, Araldite® 2011	100 : 80	Araldite® AW 2101, HW 2951 Araldite® 2012	100 : 100	Repair with adhesive bonded insert Araldite® AW 2101 / HW 2951
BM 5166	Araldite® AW 106 / HV 953 U, Araldite® 2011	100 : 80	Araldite® AW 2101, HW 2951 Araldite® 2012	100 : 100	Araldite® AV 5308 / HV 5309-1, Araldite® 2015, RenPIM® 5219 A/B, 5217 B, DT 082
BM 5266	Araldite® AW 106 / HV 953 U, Araldite® 2011	100 : 80	Araldite® AW 2101, HW 2951 Araldite® 2012	100 : 100	Araldite® AV 5308 / HV 5309-1, Araldite® 2015, RenPIM® 5219 A/B, 5217 B, DT 082

Seamless modeling pastes (machine applied)

Product	Colour	Mix ratio (pbv)	Minimum cure schedule (23°C)	Density g/cm ³	Shore-D-Hardness ISO 868	Coef. of thermal expansion 10 ⁻⁶ K ⁻¹ ISO 11359*	Deflection Temp. ISO 75 °C			
							50	100	150	200
Resin XD 4601-1 Hardener XD 4601-1	Light brown	100 : 100	Machinable after 1-2 days	0.52 - 0.57	40	100 - 105	45-55			
RenPaste® SV 4503-1 / Ren® HV 4503-1	Brown	100 : 100	Machinable after 1-2 days	0.70 - 0.80	55 - 60	100 - 105	45-55			
RenPaste® 4666 / Ren® 4666	Light grey	100 : 100	Machinable after 1 day	0.95 - 1.00	60 - 65	75 - 80	50-80			
RenPaste® 4688 / Ren® 4688	Brown	100 : 40	Machinable after 1 day	1.00	85 - 90	25 - 30			190-195	

* properties after 3 days at room temperature

www.huntsman.com/advanced_materials
advanced_materials@huntsman.com

Huntsman Advanced Materials (Switzerland) GmbH
 Klybeckstrasse 200, CH 4057 BASEL Tel: +41 61 299 11 11 Fax: +41 61 299 11 12

While all the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE. IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. The sale of products referred to in this publication is subject to the general terms and conditions of sale of HUNTSMAN Advanced Materials (Europe) BVBA or its affiliated companies. All trademarks mentioned are either property of or licensed to Huntsman Corporation or an affiliate thereof in one or more, but not all, countries. © 2011 Huntsman Advanced Materials (Switzerland) GmbH.

Product Selector Guide

PU casting and Prototyping Systems

Net size casting

Product	Mix ratio (pbw)	Pot life (3kg) at 25 °C min	Recommended Cure Schedule	Density (g/cm ³)	Shore-D-Hardness ISO 868	Compres. Strength MPa ISO 604	Compres. Modulus MPa ISO 604	Deflection Temp. ISO 75 °C				
								50	100	150	200	
RenCast [®] 5146A / RenCast [®] 5146B	80 : 100	20 -30	7 days @ 20 – 25 °C or 14 hr @ 40 °C	1.20	80	85 - 90	3000	75-80				
RenCast [®] 5146A / Rencast [®] 5146B / DT082	80 : 100 : 330	30 - 40	7 days @ 20 – 25 °C or 14 hr @ 40 °C	1.60	85	90 - 95	9500	75-80				

Fastcast polyurethanes

Product	Colour	Mix ratio (pbw)	Pot life (1kg, min)	Demoulding time (23 °C, min)	Notes	Deflection Temp. ISO 75 °C			
						50	100	150	200
RenCast [®] FC 50	Off white	20 : 100	4 - 5	30-45	Filled, machinable, polishable	95			
RenCast [®] FC 51	Grey	100 : 100	4 - 5	20-40	Filled, machinable, polishable	80			
RenCast [®] FC 52	Beige unfilled	100 : 100	6 - 8	180	Low viscosity, usable with different fillers	80			
RenCast [®] FC 53	Beige unfilled	100 : 100	3 - 4	60-90	Low viscosity, fast demould, usable with different fillers	85-90			
RenCast [®] FC 54	Blue	100 : 100	8	120-240	Slower system for thick casting	85-90			
RenCast [®] FC 55	Beige unfilled	100 : 100	4 - 6	60	Low viscosity, pigmentable	85-90			

Recommended cure schedule : 7 days at room temperature. Shore D 80-90

Foundry applications / Abrasion & Impact resistant parts

Product	Mix ratio (pbw)	Pot life (1kg / min)	Hardness Shore ISO 868	Demoulding time at 23 °C (hr)	Elongation at break % ISO 527-2	Notes
Casting Systems						
RenCast [®] 6425 A / RenCast [®] 5425 B	100 : 24	15 - 20	D 60 - 65	20 - 24	130-170	High abrasion resistance, high impact strength
RenCast [®] 6427 A / RenCast [®] 5427 B	100 : 20	35 - 40	A 70 - 75	16 - 20	200-250	Flexible high tear strength

Parts in Minutes - RenPIM[®] / RenPIM[®] VG (Vacuum Grade)

Resin / Hardener	Mix Ratio (pbw)	Density g/cm ³	Color	HDT °C ISO 75	Tensile Strength MPa ISO 527	Flex Modulus MPa ISO 178	Demoulding time at 23 °C (min)	Characteristics	Notes
RenPIM [®] 5213-1	65 / 100	1.2	Brown/cream	90	35 - 40	1300 - 1500	15-30	Flame retardant ABS type	UL 94 approved, High impact strength, high thermal resistance
RenPIM [®] 5214	80 / 100	1.2	White	120	30 - 50	1550 - 2000	10-15	PP, ABS type	Good flexural strength, high temperature resistance
RenPIM [®] 5215	80 / 100	1.2	Black	130 - 140	30 - 40	1000 - 1200	10-15	PP, ABS type	High temperature resistance
RenPIM [®] 5216	80 / 100	1.2	Translucent	80	30 - 35	1200 - 1300	15-20	PP, ABS type	High impact resistance, good dimensional stability
RenPIM [®] 5217	80 / 100	1.2	Black	85 - 90	35 - 40	1100 - 1400	10-15	PP, ABS type	High impact resistance, good dimensional stability
RenPIM [®] 5218	80 / 100	1.2	Black	90 - 100	40 - 45	1800 - 2000	20-30	PP, ABS type with longer gel time	High flexural modulus, good dimensional stability
RenPIM [®] 5219	80 / 100	1.2	White	70 - 75	60 - 70	2700 - 2900	16-18 hrs	Suitable for Hand- or machine processing	Slow curing, usable to blend with other fast PIM systems
RenPIM [®] 5222	100 / 70	1.12	Black	75	25 - 30	600 - 800	20-30	HDPE, PR like system, very tough	High Impact System, good Flexibility

Shore D 75-80 for all products except for RenPim[®] 5222 (D 55-65)

Resin / Hardener	Color	Mix Ratio (pbw)	Pot life min	Shore ISO 868	E-modulus Mpa ISO 527	HDT °C ISO 75	Characteristics	Notes
RenPIM [®] VG 5281 A / RenPIM [®] VG 5281 B	Light amber	100/25	5 to 10	A 40	/	/	Rubber Type	pigmentable, easy to process
RenPIM [®] VG 5281 A / RenPIM [®] VG 5281 B	Light amber	100/30	5 to 10	A 50	/	/	Rubber Type	pigmentable, easy to process
RenPIM [®] VG 5282 A / RenPIM [®] VG 5281 B	Light amber	100/35	5 to 10	A 60	/	/	Rubber Type	pigmentable, easy to process
RenPIM [®] VG 5282 A / RenPIM [®] VG 5281 B	Light amber	100/40	5 to 10	A 70	/	/	Rubber Type	pigmentable, easy to process
RenPIM [®] VG 5281 5283 A / RenPIM [®] VG 5281 B	Light amber	60/40/45	5 to 10	A 80	/	/	Rubber Type	pigmentable, easy to process
RenPIM [®] VG 5281 5283 A / RenPIM [®] VG 5281 B	Light amber	40/60/55	5 to 10	A 90	/	/	Rubber Type	pigmentable, easy to process
RenPIM [®] VG 5283 A / RenPIM [®] VG 5281 B	White	100/70	5 to 10	D 55	/	/	PE PP Type	pigmentable, easy to process
RenPIM [®] VG 5234 A / RenPIM [®] VG 5234 B	White	30/100	6	D 80	1700 - 1800	90	PE PP Type	white, pigmentable
RenPIM [®] VG 5285 A / RenPIM [®] VG 5285 B	Black	80/100	10	D 80	1200 - 1300	120	PE PP Type	black, high flexural strength, high heat resistance
RenPIM [®] VG 5286 A / RenPIM [®] VG 5286 B	Black	100/150	6	D 80	1700 - 1900	140	ABS Type	black, high heat resistance
RenPIM [®] VG 5287 A / RenPIM [®] VG 5287 B	Clear transparent	100/150	4 to 5	D 80	2300 - 2500	115	ABS Type	transparent, UV stabilised
RenPIM [®] VG 5289 A / RenPIM [®] VG 5289 B	Brown	100/90	5 to 6	D 78	3400 - 3600	85	ABS Type	Flame retardant (UL 94 VO approved)

www.huntsman.com/advanced_materials
advanced_materials@huntsman.com

Huntsman Advanced Materials (Switzerland) GmbH
 Klybeckstrasse 200, CH 4057 BASEL Tel: +41 61 299 11 11 Fax: +41 61 299 11 12

While all the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE. IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. The sale of products referred to in this publication is subject to the general terms and conditions of sale of HUNTSMAN Advanced Materials (Europe) BVBA or its affiliated companies. All trademarks mentioned are either property of or licensed to Huntsman Corporation or an affiliate thereof in one or more, but not all, countries. © 2011 Huntsman Advanced Materials (Switzerland) GmbH.