

Stereolithography resins

for use on SLA® 3500, SLA® 5000, SLA® 7000, Viper si2™ (solid state laser)

Product designation	Colour	Viscosity	Hardness	Flex. Modulus	Ult. Tensile Strength	Elongation at Break	Notched Izod Impact	HDT	Comments
Conditions		28°C		RT	RT	RT	0.46 MPa (1.8 MPa)		
Norm		ASTM D-2240	ASTM D-790	ASTM D-638	ASTM D-638	ASTM D-256	ASTM D-648		
Unit		(mPa.s)	(Shore D)	(MPa)	(MPa)	(%)	(J/m)	(°C)	

General purpose

RenShape® SL 5195	Clear amber	220	83	1 600	47	11	53	47 (43)	Highly accurate for master pattern (SLA® 5000 only)
RenShape® SL 5510	Clear amber	230	86	3 000	77	5	27	62 (53)	Highest accuracy (not suitable for SLA® 7000)
RenShape® SL 7510	Clear amber	400	87	2 400	44-57	10-14	32-37	51-58 (47-49)	Accurate multifunctional parts with high throughput (not suitable for SLA® 7000)
RenShape® SL 7520	Clear amber	570	86	2 800-2 900	62-65	5-7	15-18	54 (49)	High throughput, multifunctional parts (SLA® 7000 only)
RenShape® SL 7565	Clear Lt. amber	206	84	1 900-2 100	46-54	19-30	27-38	50 (118)	Clear ABS-like parts

Investment casting

RenShape® SL 7800	Clear amber	240	87	2 300-2 700	41-47	10-18	37-58	62 (-)	Highly accurate and dimensionally stable for Quickcast™ patterns
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PP-like

RenShape® SL 7545	Clear amber	430	79	1 400-1 600	27-37	12-21	28-39	48-50 (43-48)	Durable PP-like parts
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White ABS-like

RenShape® SL 7580	White	580	84	2 400	53	11	34	63 (52)	Durable ABS-like parts
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High heat resistance

RenShape® SL 5530	Clear amber	270	88	2 600-3 400	57-61	3-4	21	70-85 (55-58)	HDT reaches 250°C after thermal post cure
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High clarity

RenShape® SL 7570	Clear	180	89	2 500-2 800	60	6-7	24-26	55 (122)	Clear, glass-like appearance parts
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Quickcast™ is a trademark of 3D Systems Corporation • RT : Room Temperature = 23±2°C • HDT : Heat Deflection Temperature

Stereolithography resins

for use on SLA® 250 (He-Cd laser)

Product designation	Colour	Viscosity	Hardness	Flex. Modulus	Ult. Tensile Strength	Elongation at Break	Notched Izod Impact	HDT	Comments
Conditions		28°C		RT	RT	RT	0.46 MPa (1.8 MPa)		
Norm		ASTM D-2240	ASTM D-790	ASTM D-638	ASTM D-638	ASTM D-256	ASTM D-648		
Unit		(mPa.s)	(Shore D)	(MPa)	(MPa)	(%)	J/m	(°C)	

RenShape® SL 5170	Clear amber	220	85	3 000	60	7-19	27-37	55 (49)	Highly accurate for master pattern
RenShape® SL 5240	Amber	350	84	1 500	37	22-26	43-53	58 (50)	PP-like parts suitable for «snap-fit»
RenShape® SL 5260	White	290	85	2 400	58	12	40	58 (51)	Durable ABS-like parts with fine features

RT : Room Temperature = 23±2°C • HDT : Heat Deflection Temperature

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Aerospace Design and Prototype Selector guide

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As sophisticated computer-aided design and machining programs are developed, Huntsman Advanced Materials leads the industry in the introduction of technologically advanced materials: die-forming materials, modeling pastes and stereolithography resins.

Modeling and styling boards

Product designation	Colour	Density	Hardness	Compressive Modulus	Coefficient of Thermal Expansion	HDT
Conditions		ISO 868 (g/cm ³)	RT	RT	-30°C to +45°C	1.8 MPa
Norm			ISO 604	ISO 604	ISO 11359	ISO 75
Unit		(g/cm ³)	(Shore D)	(MPa)	(10 ⁻⁴ K ⁻¹)	(°C)
RenShape® BM 5108	White	0.08	-	-	-	-
RenShape® BM 5025	Apricot	0.24	-	140	60-70	55-60
RenShape® BM 5185	Apricot or brown	0.5	-	500-600	50-55	60-70
RenShape® BM 5440	Brown	0.55	55-60	650-750	60-65	55-65
RenShape® BM 5460	Brown	0.70-0.73	60-65	1 250-1 350	50-55	60-70

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Tooling boards

Product designation	Colour	Density	Hardness	Compressive Strength	Compressive Modulus	Coefficient of Thermal Expansion	HDT
Conditions		ISO 868 (g/m ³)	RT	RT	RT	-30°C to +45°C	1.8 MPa
Norm			ISO 604	ISO 604	ISO 604	ISO 11359	ISO 75
Unit		(g/m ³)	(Shore D)	(MPa)	(MPa)	(10 ⁻⁴ K ⁻¹)	(°C)

Prepreg lay up (120°C)

RenShape® BM 5055	Green	0.72-0.75	75	50-55	2 300-2 400	35-45	135-140
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Stretch dies / jigs

RenShape® BM 5066	Beige	1.1	75-80	55-60	2 600-2 800	55-60	75-85
RenShape® BM 5166	Ivory	1.7	85-90	90-100	7 000-7 500	45-50	75-80
RenShape® BM 5266	Dark grey	1.7	85-90	125-130	7 000-7 500	45-50	120-125

Foundry

RenShape® BM 5172	Green	1.2	80	75-80	3 200-3 400	60-65	75-85
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Seamless modeling pastes and patty

Product designation	Mix Ratio	Consistency	Density	Hardness	Pot Life	Compr. Strength	Flexural Strength	Coef. of Thermal Expansion	HDT	Curing Time before machining
Conditions	ISO 868 (g/cm ³)		RT	RT	RT	RT	18°C to 30°C	1.8 MPa		
Norm			ISO 604	ISO 604	ISO 178	ISO 11359	ISO 75			
Unit	(pbw)		(g/cm ³)	(Shore D)	(min)	(MPa)	(MPa)	(10 ⁻⁴ K ⁻¹)	(°C)	
RenPaste® SV 4503-1 / HV 4503-1	100:100	Thixotrope	0.75-0.8	55-60	15	12 (15) ¹⁾	11 (12) ¹⁾	100	42 ¹⁾ (55) ²⁾	2 days at RT
XD 4616 R/H	100:100	Thixotrope	1.25-1.3	75-80	15	42 (58) ¹⁾	25 (37) ¹⁾	80-85	56 ¹⁾ (85) ²⁾	2 days at RT
RP 4040²⁾	One component	Clay like patty	1.7	85-90	1 year	125	55-60	20-24	170-180 ¹⁾	Special cure cycle at 180°C

¹⁾ Cured 8h at 80°C • ²⁾ Tg by TMA • RT : Room Temperature = 23±2°C • HDT : Heat Deflection Temperature

Infusion systems

Product designation	Hardener	Mixed Viscosity	Gel Time	Glass Transition Temperature E' DMA	Curing
Conditions		RT	400 cm ³	ASTM D-4065 (°C)	RT
Norm					
Unit		(mPa.s)	(min)	(°C)	(°C)
RenInfusion® 8601	Ren® 8601	175	130	65**	65
RenInfusion® 8601	Ren® 8602	175	70	60**	RT
RenInfusion® 8603	Ren® 8603	240	80	75	RT
RenInfusion® 8604	Ren® 8604	370	120	75	RT
RenInfusion® 8605	Ren® 8605	700	480 580*	155	180
RenInfusion® 8606	Ren® 8606	1 800	670*	175	180
RenInfusion® 8610 (One component)	-	10 000 (320 @ 50°C)	N/A	155**	180
RenInfusion® 8612 (One component)	-	5 000 (400 @ 50°C)	N/A	95***	150
RenInfusion® 8615	Ren® 8615	550	20 hr*	215	180

* 120 cm³ • ** E' peak • *** TMA • RT : Room Temperature = 23±2°C

Surface coats (Gelcoats)

Product designation	Hardener	Colour	Mix Ratio	Pot Life	HDT	Curing	Key characteristics
Conditions			500 ml	0.46 MPa	RT		
Norm							
Unit			(pbw)	(min)	(°C)	(°C)	
RenGel® SW 10	HY 2404 HY 5159	White	100:10 100:8	20 60	60-70 80	RT	General purpose, sandable
RenGel® SW 419-1	HV 2419	Black	100:13	15-20	60-70	RT	Abrasion resistant
RenGel® SW 18	HY 2404 HY 5159	Green	100:20 100:16	10-15 25	85 100	RT + med. heat	Polishable, and very easy application
RenGel® SW 56	HY 2404 HY 5159	Caramel	100:13 100:10	10-15 25-30	100 120	RT + med. heat	Styrene resistant, viscous and not polishable
XD 4615	HY 5159	Black	100:15	25-30	120	RT + med. heat	Polishable with easy application
XD 4623	HY 5159	Green	100:17	25-30	120	RT + med. heat	Polishable with extra easy application

High temperature surface coats

RenGel® SW 5200	HY 5210 HY 5211 HY 5212 HY 5213	Black	100:20	96 hr 18 hr 10 hr 4.5 hr	190 200 200 180	Special cure cycle at 180	Very long open time, easy application, high heat resistance
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High temperature laminating

Product designation	Hardener	Colour	Mix Ratio	Pot Life	HDT	Curing	Key characteristics
Conditions			500 ml	0.46 MPa	RT		
Norm							
Unit			(pbw)	(min)	(°C)	(°C)	

Laminating systems for fabrication of workshop facilities

RenLam® M-1	HY 956	Light yellow	100:20	30	50	14 hr @ 40	Low cost basic system
RenLam® CY 219	HY 5160 HY 5161 HY 5162	Light yellow	100:50 100:50 100:50	80 40 20	45-50 50-55 50-55	14 hr @ 40	Standard system with different speed hardeners
RenLam® LY 560	HY 560	Light yellow	100:25	30	65-70	14 hr @ 40	Aircraft accredited product

Laminating systems 120°C heat-resistant also suitable for infusion

RenLam® LY 113	HY 97-1	Light yellow	100:30	80	120	14 hr up to 120	Medium heat resistance, low viscosity and good wetting of fibres
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High-temperature laminating systems

RenLam® LY 5210	HY 5210 HY 5211 HY 5212 HY 5213	Amber	100:40 100:32	48 hr 24 hr 12 hr 3-3.5 hr	210 190 220 180	Special cure cycle at 200	Very long open time, good wetting and high heat resistance
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HDT : Heat Deflection Temperature