

product overview 12.2013

Synthene Rapid prototyping resins

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PROTOTYPES
SMALL SERIES PRODUCTION



PRC 1708



PRC 1708



C 3000



C 5000



PRA 794



PR 2000



PRC 1700



PR 751



PR 700



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PR 403



EHP



PRODUCT GROUP ²	RUBBER						RUBBER, HDPE			HDPE/ PP	PS, ABS & PEEK, PA				TRANSPARENT UV-STABLE ABS & PMMA, PC				SPECIAL FLAME RETARDANT RESINS				
	EHP 40A TO EHP 80A						EHP 30D TO EHP 55D			PR 891	PR 403	PR 1503 (403LP)	NEW PR 2000	NEW PR 2900 (HM)	PR 700	PR 751	PRC 1708	PRC 1700	C 3000	C 5000	PRA 730	PRA 794	
Hardness (Shore A/ D)	40A	50A	62A	68A	75A	80A	35-40D	45D	50-55D	68D	74D	74D	80D	86D	87D	87D	87D	87D	85D	82D	81D	80D	
Countertype of ³	Rubber						RUBBER/ HDPE			HDPE/ PP	ABS/ PS	ABS/ PS	ABS	PA/ PC	ABS	ABS/ PEEK	ABS/ PC/ PMMA	ABS/ PC/ PMMA	PMMA/ PC	PMMA/ PC	ABS	ABS	
Colour of the cured material	amber						amber			camel beige	milky/white	milky/white	milky/white	golden transparent	black	black	transparent/ UV-stable	transparent/ UV-stable	transparent/ UV-stable	transparent/ UV-stable	dark gray	black	
Reach (CVHT List July-2012)	✓						✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Fire rated type															UL 94 HB		UL 94 HB	UL 94 HB			FAR 25	UL 94 5V	
Availability of dielectric data															✓		✓	✓					
Density (g/ cm ³)	1,05						1,06			1,15	1,1	1,1	1,11	1,17	1,14	1,15	1,1	1,1	1,1	1,08	1,2	1,16	
Flexural modulus (Mpa) ISO 178										480	1700	1700	2000	2900	2300	2000	2200	2200			2100	1500	
Maximal flexural strength (Mpa) ISO 178										20	65	65	80	119	80	84	80	80			63	65	
Elongation at break (%) ISO 527											6	6	9	7	13	8	16	16			4	5	
Tensile strength (Mpa) ISO 527											47	47	57	78	60	80	62	62			41	60	
Impact resistance (kJ · m ⁻²)										does not break	35	35		70	60	50	90	90			16	20	
Elongation at break % 23°C, ISO 37	1300	1100	1100	800	800	800	270	180	120														
Tear resistance ISO 34	15	19	27	33	41	60	42	44	50														
Heat deflection Temperature (C°), ISO 75 Ae ⁴										90	75	75	101-113	92	130	150	105	105	105 ³	70 ³	130	130	
Working temperature (C°)	-40°/+90°						-40°/+90°																
Mixing ratio (Weight/ P: Iso)	100:100	80:5:100	60:10:100	40:15:100	20:20:100	25:100	40:70:30	60:30:70	70:100	34:100	60:100	60:100	50:100	50:100	80:100	60:100	60:100	60:100	60:100	80:100	100:72	80:100	
Mix viscosity at 25°C (mPa · s)	2200	2200	2300	3800	4500	4500	2800	2000	1600	1200	160	160	350	400	600	950	500	500	600	300	2500	1000	
Pot life (25°C/ min)	64	64	62	60	64	65	29	20	17	12	5	15	6	7	7	8	8	17-19	30	50	8	8	
Demoulding time (70°C/ min)	180	180	120	120	120	120	120	120	120	60	20	45	45	45	45-60	50	45	2-3 h	2-5 h	2-20 h/ 50 °C	45	45	
Linear shrinkage (3mm thickness, 23°C (mm/ m)										5-6	2	2	3		2	2	2	2			2	2	
App. maximal wallthickness (mm)	100	80	80	80	60	50	30	20	20		10	10					5	10	50	100		20	
Mold life/nb of castings in Silicone ¹	40+						40+			30+	20-30	20-30	20+	15-20	30-60	30-50	20+	20+	20+	20+	30+	30-50	
Standard Packaging/ Kg	various						various			10,72	16	16	12	15	18	16	16	9,6	9,6	16	18	17,2	18
Alternative Packaging on request/ Kg	on request						on request			20,1								16	16				
Shelf life in months/ minimum ⁵	18						18			18	12	12			18	18	18	6	6	6	9	12	18
Specific properties	<ul style="list-style-type: none"> Adjustable Hardnesses between 40A and 80A Shore Extreme Tear resistance Temperature resistant Nice surface feel Colourable Can also be used for tooling 						<ul style="list-style-type: none"> Adjustable hardnesses between 30D and 55D Shore High tear resistance Temperature resistant Nice surface feel Colourable Can also be used for tooling 			<ul style="list-style-type: none"> Flexible, impact & abrasion resistant Suitable for hinges Colourable, also in black 	<ul style="list-style-type: none"> 5 min of Pot life Very short demoulding time Easy to use Possibility to cast in non-preheated moulds 	<ul style="list-style-type: none"> 15 min of Pot life for casting bigger parts Easy to use Possibility to cast in non-preheated moulds 	<ul style="list-style-type: none"> ABS like all-round material Good mechanical properties Colourable 	<ul style="list-style-type: none"> Very rigid Material, with a high E-Modulus and a good elongation at break Countertype of glass filled materials Very good colourability, golden transparency 	<ul style="list-style-type: none"> Very good All-round-Properties Extremely long mould life 	<ul style="list-style-type: none"> Rigid & resistant to deformation Long mould life 	<ul style="list-style-type: none"> For transparent like glass technical parts Very good optical properties 8 min of Pot life 	<ul style="list-style-type: none"> For transparent like glass, big or thick technical parts Very good optical properties 17 min of Pot life 	<ul style="list-style-type: none"> For transparent like glass parts with large wall thickness (5-30+ mm) 30 min of Pot life 	<ul style="list-style-type: none"> For transparent like glass parts Massive casting with very large wall thicknesses 50 min of Pot life 	<ul style="list-style-type: none"> Flame retardant according to FAR 25 	<ul style="list-style-type: none"> Flame retardant according to UL94 5V Excellent flame retardancy Available UL94/ Vo test report Long mould life 	

The exact data are available in our TDS. The thermal and mechanical properties have been tested under specific conditions of curing and post-curing.

- Silicone mould life : according to our experience, depending on the mould geometry, surface, demoulding time, kind of silicone, etc.
- Countertype of plastic once the resin is cured
- Heat treatment of parts with large wall thickness is not advised
- After heat treatment
- Of non-open jerricans or bottles