

PU8098

VACUUM CASTING URETHANE
FOR TECHNICAL PARTS AND PROTOTYPES



BASIC PROPERTIES

Item		Value	Remarks
Appearance	A Comp.	Colorless ~ pale yellow / Black color	Polyols
	B Comp.	Colorless ~ pale yellow	Isocyanates
Color of Finished Article		White / Black	
Viscosity	A Comp.	1500	Viscometer Type BM
	B Comp.	210	
Specific Gravity	A Comp.	1.09	Specific Gravity Cup
	B Comp.	1.20	Standard Hydrometer
Mixing Ratio	A:B	100:250	Parts by weight
Pot Life	(25°C)	4 minutes and 30 seconds	Resin 100 g
	(35°C)	2 minutes and 30 seconds	
Specific Gravity of Finished Article		1.22	JIS K 7112

BASIC PHYSICAL PROPERTIES

Item		Data	Remarks
Hardness	Shord D	85	Wallace Hardness Tester
Tensile Strength	MPa	70	JIS K 7113
Elongation	%	10	
Bending Strength	MPa	75	JIS K 7171
Young's modulus in flexure	MPa	1600	
Impact strength	kJ/m ²	10	JIS K 7110 Izod V Notch
Shrinkage	%	0.4	Own method
Deflection temp. under load	°C	120	JIS K 7207(1.80 MPa)
Demould Time		60 minutes	Mold Temp.: over 70 °C

P8150

VACUUM CASTING URETHANE
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BASIC PHYSICAL PROPERTIES

Item		Data	Remarks
Appearance	A Comp.	Ivory color	Polyols
	B Comp.	Light Yellow transparent	Isocyanates
Color of Finished Article		Ivory	Adjustable to be white or black
Viscosity (mPa · s,25°C)	A Comp.	800	
	B Comp.	160	Viscometer Type BM
Specific Gravity (25°C)	A Comp.	1.09	Standard Hydrometer
	B Comp.	1.19	Standard Hydrometer
Mixing Ratio	A:B	100:200	Parts by weight
Pot Life	25°C	5 minutes	Resin 100 g
Specific Gravity of Finished Article		1.21	JIS K-6911
Hardness	Shord D	80-85	
Tensile Strength	kg/cm ²	740	
Elongation	%	16	JIS K-6911
Young's modulus in flexure	kg/cm ²	800	
Modulus of Elasticity in Static Bending	kg/cm ²	18300	
Impact strength	Kg-cm/cm	12-15	Izod V Notch
Shrinkage Factor	%	0.3	Own method
Load Deflection Temperature	°C-1	6X10 ⁻⁵	JIS K-6911
Coefficient of Heat Expansion	°C	100	JIS K-7207 (18.5kg/cm ²)

PU8263

VACUUM CASTING URETHANE
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BASIC PHYSICAL PROPERTIES

Item		Data	Remarks
Appearance	A liquid	Dark	Polyols
	B liquid	Light yellow transparent	Isocyanates
Color of Finished Article		White & Non-transparent	Long-term exposure to sunlight will turn yellow
Viscosity (mPa · s, 25°C)	A liquid	1000	Viscometer Type BM
	B liquid	160	
Specific Gravity (25°C)	A liquid	1.31	Standard Hydrometer
	B liquid	1.19	Standard Densimeter
Mixing Ratio	A: B	100:150	Parts by weight
Pot Life	25°C	5 min and 30 sec	Resin 100g
Specific Gravity of Finished Article		1.30	JIS K-6911
Hardness	Shore D	80~85	
Tensile Strength	Kg/ cm ²	690	JIS K-6911
Elongation	%	15	
Bending Strength	Kg/cm ²	950	
Young's modulus in flexure	Kg/cm ²	22600	
Impact strength	Kg-cm/cm	9~11	
Shrinkage	%	0.3	Own method
Coefficient of thermal expansion	°C ⁻¹	8 X 10 ⁻⁵	JIS K-6911
Deflection temp. under load	°C	80	JIS K-7207(18.5 kg/cm ²)
Demould Time	Minutes	45~60 minutes	

8400 / 8400N

VACUUM CASTING URETHANE
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BASIC PHYSICAL PROPERTIES

Item		Value		Remarks
Appearance	A Comp.	Black	Colorless, transparent	Polyol poly
	B Comp.	Light Yellow transparent		
	C Comp.	Light Yellow transparent		
Color of Finished Article		Black	Milky white	N-type can be colored
Viscosity (mPa · s, 25°C)	A Comp.	600		BM-type viscometer
	B Comp.	40		
	C Comp.	900		
Specific Gravity (25°C)	A Comp.	1.11		Standard proportion Cup
	B Comp.	1.17		
	C Comp.	0.98		

Material		Shore 90A	Shore 80A	Shore 70A	Shore 60A
Pot Life	25	5~6minutes	5~6minutes	5~6minutes	5~6minutes
Hardness	Shore A	90	80	70	60
Tensile Strength	Kg/cm ²	180	140	80	70
Elongation	%	200	240	260	280
Tear Strength	Kg/cm	70	60	40	30
Elastic Rebound	%	50	52	56	56
Shrinkage	%	0.6	0.5	0.5	0.4

Material		Shore 50A	Shore 40A	Shore 30A	Shore 20A
Pot Life	25	5~6minutes	5~6minutes	5~6minutes	5~6minutes
Hardness	Shore A	50	40	30	20
Tensile Strength	Kg/cm ²	50	25	20	15
Elongation	%	300	310	370	490
Tear Strength	Kg/cm	20	13	10	7
Elastic Rebound	%	60	63	58	55
Shrinkage	%	0.4	0.4	0.4	0.4

PX223/HT

VACUUM CASTING URETHANE
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BASIC PROPERTIES

		PART A	PART B	MIXING
Composition		ISOCYANATE	POLYOL	
Mixing ratio by weight at 25°C		100	80	
Aspect		liquid	Liquid	liquid
Colour		colorless	black	black
Viscosity at 25°C (mPa.s)	BROOKFIELD LVT	1.100	300	850
Density of parts before mixing at 25°C	ISO 1675 :1975	1.17	1.12	-
Density of cured mixing at 23°C	ISO 2781 :1988	-	-	1.14
Pot life at 25°C on 90g (min.)	-			6 - 7

MECHANICAL PROPERTIES AT 23°C ⁽¹⁾

Flexural modulus of elasticity	ISO 178 :2001	MPa	2.300
Flexural strength	ISO 178 :2001	MPa	80
Tensile strength	ISO 527 :1993	MPa	60
Elongation at break in tension	ISO 527 :1993	%	11
Charpy impact resistance	ISO 179/2D :1994	kJ/m ²	> 60
Hardness - at 23°C - at 120°C	ISO 868 :1985	Shore D1	80 > 65

THERMAL & SPECIFIC PROPERTIES ⁽¹⁾

Glass transition temperature	T.M.A.-Mettler	°C	> 120
Coefficient of linear thermal expansion (C _L TE) [+15, +120]°C	T.M.A.-Mettler	ppm/K	115
Linear shrinkage	-	mm/m	4
Maximal casting thickness	-	mm	5 - 10

(1) Average values obtained on standardized specimens / Hardening 1 hr at 70°C + 1 hr at 100°C + 12 hr at 110°C

PX100

VACUUM CASTING URETHANE
FOR TECHNICAL PARTS AND PROTOTYPES



BASIC PROPERTIES

		PART A	PART B	MIXING
Composition		ISOCYANATE	POLYOL	
Mixing ratio by weight		100	100	
Aspect		liquid	liquid	liquid
Colour		light to dark amber	yellow straw	Off-white
Viscosity at 25°C (mPa.s)	BROOKFIELD LVT	60	175	100
Specific gravity at 25°C	ISO 1675 :1975	1.15	1.02	-
Specific gravity at 23°C	ISO 2781 :1988	-	-	1.06
Pot life at 25°C on 200g (min.)	-			15

MECHANICAL PROPERTIES AT 23°C ⁽¹⁾

Flexural modulus of elasticity	ISO 178 :2001	MPa	1,500
Maximal flexural strength	ISO 178 :2001	MPa	55
Maximal tensile strength	ISO 527 :1993	MPa	40
Elongation at break	ISO 527 :1993	%	20
CHARPY impact strength	ISO 179/2D :1994	kJ/m ²	25
Hardness - at 23°C	ISO 868 :1985	Shore D1	74
- at 80°C			65

THERMAL & SPECIFIC PROPERTIES

Glass temperature transition (1)	TMA METTLER	°C	75
Linear shrinkage (1)	-	mm/m	4
Maximal casting thickness	-	Mm	5
Demoulding time @ 23°C	-	Hours	4
Complete hardening time @ 23°C	-	days	4

(1) Average values obtained on standardized specimens / Hardening 12 hr at 70°C

PX330

VACUUM CASTING URETHANE
FOR TECHNICAL PARTS AND PROTOTYPES



BASIC PROPERTIES

		PART A	PART B	MIXING
Composition		ISOCYANATE	POLYOL	
Mixing ratio by weight		100	100	
Aspect		liquid	liquid	liquid
Colour		straw yellow	off-white	off-white
Brookfield LVT viscosity at 25°C (mPa.s)	-	150 - 200	3,500	1,000 ⁽¹⁾
Specific gravity at 25°C	ISO 1675 : 1985	1.22	1.30	-
Specific gravity at 23°C	ISO 2781 : 1996	-	-	1.35
Pot life at 25°C on 200g (min)	-			4 - 6

MECHANICAL PROPERTIES AT 23°C ⁽¹⁾

Final hardness	ISO 868 : 2003	Shore D1	87
Tensile modulus	ISO 527 : 1993	MPa	4,000
Resistance at break in tension	ISO 527 : 1993	MPa	70
Elongation at break	ISO 37 : 1994	%	3.0
Flexural modulus of elasticity	ISO 178 : 2001	MPa	3,400
Maximal flexural strength	ISO 178 : 2001	Mpa	119
Charpy impact strength	ISO 179 1EU : 1994	kJ/m ²	30

THERMAL & SPECIFIC PROPERTIES

Glass transition temperature ⁽²⁾	11359 : 2002	°C	100
Linear shrinkage on 3 mm thickness - after 1 hour at 70°C - after 12 hours at 70°C - after 12 hours at 70°C + 12 hours at 80°C	-	mm/m	3 3.1 3.35
Maximal casting thickness	-	mm	5
Demoulding time at 70°C	-	min.	40
Self-extinguishible	FAR 25 UL 94	3 mm	2.2 ⁽³⁾ VO ⁽⁴⁾

(1) Viscosity after 1 minute mixing (mixing is not miscible straight after)

(2) Average values obtained on standard specimens/Hardening 12 hr at 70°C + 12 hr at 80°C

(3) Meets the requirements of the FAR 25.853 for flammability 12 seconds on 2,2 mm

(4) Internal test - Axson France's test report : TR 04189 -REV 00

PX552/HT

VACUUM CASTING URETHANE
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BASIC PROPERTIES

Composition		ISOCYANATE PX 521HT A	POLYOL PX 522HT B	MIXING
Mixing ratio by weight		100	55	
Aspect		liquid	liquid	liquid
Colour		transparent	bluish	transparent ⁽²⁾
Viscosity at 25°C (mPa.s)	Brookfield LVT	200	1,100	500
Density of parts before mixing	ISO 1675: 1985	1.07	1.05	-
Density of the cured product	ISO 2781: 1996	-	-	1.06
Pot life at 25°C on 155g (min)	-			5 - 7

MECHANICAL PROPERTIES AT 23°C ⁽¹⁾

Flexural modulus	ISO 178 : 2001	MPa	2.100
Flexural strength	ISO 178 : 2001	MPa	105
Tensile modulus	ISO 527 : 1993	MPa	2.700
Tensile strength	ISO 527 : 1993	MPa	75
Elongation at break in tension	ISO 527: 1993	%	9
Charpy impact strength	ISO 179/1 eU : 1994	kJ/m ²	27
Final hardness	ISO 868 : 2003	Shore D1	87

THERMAL & SPECIFIC PROPERTIES ⁽¹⁾

Glass temperature transition (T _g)	ISO 11359 : 2002	°C	110
Heat deflection temperature (HDT 1.8 MPa)	ISO 75 Ae :1993	°C	100
Maximal casting thickness		mm	10
Demoulding time at 70°C (thickness 3 mm)		min.	45

(1) Average values obtained on standard specimens/Hardening 4 hrs at 80°C + 16 hrs at 100°C

(2) PX 522 is available in orange (PX 522HT OE Part B) and in red (PX 522HT RD Part B)

UP4280

VACUUM CASTING URETHANE
FOR TECHNICAL PARTS AND PROTOTYPES



BASIC PROPERTIES

		PART AC or AK or AN	UP4280B	UP4280B2	MIXED
Composition		Polyol	Isocyanate	Isocyanate	
Mix ratio by weight		100	200	200	
Aspect		liquid	liquid	liquid	liquid
Colour		AC=White AK=Black AN=Cream	Colourless	Colourless	AC/B2=Off white AK/B2=Black AN/B2=Light beige
Viscosity at 23°C (mPa.s)	BROOKFIELD LVT	700	175	175	300
Specific gravity at 23°C Specific gravity of cured product at 23°C		1.06 -	1.17 -	1.17 -	- 1.12
Pot life at 25 - 30°C on 100 g (min)					4 - 5

MECHANICAL PROPERTIES AT 23°C

		UP-4280B	UP-4280B2
Hardness	Shore D	81	82
Tensile strength	MPa	84	86
Flexural strength	MPa	95	100
Flexural modulus	MPa	2100	2100
Elongation at break	%	13	17
Impact strength (IZOT)	J/m	100 (notched)	110 (notched)

THERMAL & SPECIFIC PROPERTIES

			UP-4280B	UP-4280B2
Heat deflection temperature		°C	93	100
Linear shrinkage (2 mm)	-	%	0.3	0.3
Demoulding time (2mm) at 60 - 70°C	-	min	30 - 40	30 - 40

UP5690

VACUUM CASTING URETHANE
FOR TECHNICAL PARTS AND PROTOTYPES



BASIC PROPERTIES

		UP 5690 AW or AK	UP 5690 B	UP 5690 C	MIXED
Composition		Polyol	Isocyanate	Polyol	
Mix ratio by weight		100	100	0 - 50	
Aspect		liquid	liquid	liquid	liquid
Colour		AW= White AK= Black	Colourless	Milk white	AW/B/C=White AK/B/C=Black
Viscosity at 23°C (mPa.s)	BROOKFIELD LVT	1000 - 1500	140 - 180	4500 - 5000	500 - 700
Viscosity at 40°C (mPa.s)	BROOKFIELD LVT	400 - 600	-	2300 - 2500	300 - 500
Specific gravity at 25°C Specific gravity of cured product at 23°C	ISO 1675 :1975 ISO 2781 :1988	1.06 -	1.15 -	1.06 -	- 1.13
Pot life at 25°C on 100 g (min)					10 - 15
Pot life at 40°C on 100 g (min)					5 - 7

MECHANICAL PROPERTIES AT 23°C ⁽¹⁾

A/B/C			100/100/0	100/100/20	100/100/30	100/100/50
Hardness	ISO 868 : 2003	Shore D	83	80	78	75
Tensile strength	ISO 527 : 1993	MPa	35	30	28	25
Flexural strength	ISO 178 : 2001	MPa	50	35	30	20
Flexural modulus	ISO 178 : 2001	MPa	1300	1000	900	600
Elongation at break	ISO 527 : 1993	%	50	60	65	90
Impact strength (CHARPY) <i>Unnotched specimens</i>	ISO 179/2D : 1994	KJ/m ²	100	90	85	75

THERMAL & SPECIFIC PROPERTIES

A/B/C		100/100/0	100/100/20	100/100/30	100/100/50
Glass transition temperature (T _g) ⁽¹⁾	°C	In process	In process	In process	In process
Linear shrinkage	%	0.35	0.35	0.35	0.35
Demoulding time (2 - 3mm) at 70°C	min	60 - 90			

(1) Average values obtained on standard specimens / Hardening 16hr at 80°C after demoulding.