

Similar to ABS

Hei-Cast 8150

DESCRIPTION

Hei-Cast 8150 is an ABS grade urethane resin used for vacuum casting application.

Hei-Cast 8150 offers the properties so far unobtainable with conventional urethane cast material. Well-balanced physical properties, excellent cure properties and superior dimensional stability of Hei-Cast 8150 make it possible to use urethane resin for the manufacture of proto-types and for the monitoring of strength of general injection molded parts as a new cast material with sufficiently high practical strength. Hei-Cast 8150 is also suited for use in the parts which are produced in small lot.

BASIC PROPERTIES

Item		Value	Remarks
Appearance	A Comp.	Beige/Black/Not colored	Polyols
	B Comp.	Clear, pale yellow	Isocyanates
Color of Article		Beige/Black/Milky white	
Viscosity (mPa.s,25 °C)	A Comp	800	Viscometer Type BM
	B Comp	160	
Specific Gravity (25 °C)	A Comp	1.09	Specific Gravity Cup
	B Comp	1.19	Standard Hydrometer
Mixing Ratio	A : B	100 : 200	Parts by weight
Pot Life	25 °C	5 minutes	Resin 100g
S. G. of Finished Article	25 °C	1.21	JIS K-7112

PHYSICAL PROPERTIES VS. TEMPERATURE

Temperature °C	Bending strength (MPa)	Young's modulus in flexure(MPa)	Impact strength (kJ/m ²)
-20	112	2060	7.8
±0	98	1840	9.1
+20	86	1700	8.6
+40	74	1650	9.8
+60	59	1490	8.3
+80	36	1250	9.5

Remarks: Measurement of physical properties at each environmental temperatures.

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BASIC PHYSICAL PROPERTIES

Item		Value	Remarks
Hardness	Shore D	84	Wallace Hardness Tester
Tensile Strength	MPa	73	JIS K-7113
Elongation	%	16	
Bending strength	MPa	78	JIS K-7171
Young's modulus in flexure	MPa	1790	
Impact strength	kJ/m ²	12	JIS K-7110 Izod V Notch
Shrinkage	%	0.3	Inhouse specification
Deflection temp. under load	°C	100	JIS K-7191(1.80 MPa)
Coefficient of thermal expansion	/°C	6×10 ⁻⁵	JIS K-6911
Difficult-inflammability	UL-94	HB approved product	UL-94 test in our laboratory
Demold Time	Minute	45 ~ 60	Mold temp. :over 60 °C

Remarks: Color of cured material changes yellow on exposure to sun light or UV ray.

Curing condition : Mold temperature:60 °C 60 °C×60 min. + 25 °C×24 hours.

Physical properties listed above are typical values measured in our laboratory and not the values for specification. When using our product, it must be noted that physical properties of final product may differ depending on the contour of article and the molding condition.

ELECTRICAL PROPERTIES

Measurement	Unit/Condition		Value
Surface resistivity	Ω		10 ¹⁵
Volume resistivity	Ω · cm		10 ¹⁵
Dielectric breakdown voltage	KV/mm		19
Dielectric constant ε	25 °C	60Hz	4.1
		10MHz	3.7
	80 °C	60Hz	4.8
		10MHz	4.1
Dielectric loss tangent tanδ	25 °C	60Hz	0.015
		10MHz	0.035
	80 °C	60Hz	0.051
		10MHz	0.046

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CHEMICAL RESISTANCE

Chemicals	Weight change (%)	Loss of gloss	Discoloration	Crack	Warping	Swelling	Degradation	Dissolution
Distilled water	0.14	O	O	O	O	O	O	O
10% Sulfuric acid	0.13	O	O	O	O	O	O	O
10% Hydrochloric acid	0.14	O	O	O	O	O	O	O
10% Sodium hydroxide	0.11	O	O	O	O	O	O	O
10% Ammonia water	0.17	O	O	O	O	O	O	O
Acetone*1	20	O	O	O	O	X	X	O
Toluene	0.00	O	O	O	O	O	O	O
Methylene chloride*2	13	△	O	X	O	X	X	X
Trichloroethane	0.02	O	O	O	O	O	O	O
Ethyl acetate	5.9	△	O	O	O	X	O	O
Ethanol	1.3	O	O	O	O	O	O	O
Gasoline	0.02	O	O	O	O	O	O	O
Benzene	0.00	O	O	O	O	O	O	O

Tested according to JIS K-6911. Changes after 24 hrs. immersion in each chemicals were observed. Those marked with *1 mark and *2 mark were immersed for 40 min. and 15 min. respectively.

○:Good, △:Slightly No good, ×: Bad

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PU858

CHARACTERISTICS

- Flame resistant, UL-94 V-0 UL recognized (UL File Number E62027)
- Good flexibility
- Similar to ABS Resin

MAIN APPLICATION

- Vacuum prototype modeling
- Small lot production

PROPERTY BEFORE CURING

Item	Condition • Unit	MU-858A	MU-858B
Appearance	Visual	Colorless transparent	Light yellow transparent
Specific gravity	25 °C	1.28	1.19
Viscosity	25 °C mPa·s	850	200
Mixing ratio	By weight %	100 : 170	
Pot life	25 °C、100 g	5 minutes	

STANDARD CURING CONDITION

- Resin Temperature 30 ~ 40 °C
- Mold Temperature 60 ~ 70 °C
- Curing 60 ~ 70 °C x 60 ~ 90minutes

PROPERTY AFTER CURING

Item	Condition	Unit	Typical value
Curing Condition			60 °C x 60minutes
Appearance	Visual		White
Hardness	JIS K-7215 25 °C	Shore D	80
Flexural strength	JIS K-7171	MPa	90
Flexural modulus	JIS K-7171	MPa	2000
Impact strength	JIS K-7110 Izod with V notch	kJ/m ²	10
Load deformation temperature	JIS K-7191 Load=1.8M Pa	°C	85
Shrinkage	t=4	%	0.3
Flammability	UL94 File Number E62027	3.0mm	V-0

The above values are typical , and not guaranteed values.

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APPLICATIONS

6160 is a high temperature resistant vacuum injection resin

PHYSICAL PROPERTIES

	PART A	PART B	MIXING
Composition	POLYOL	ISOCYANATE	
Brookfield LVT viscosity at 25°C(mPa.s)	280-380	250-350	220-320
Specific gravity (25°C)	0.98-1.0	1.21	1.20
Color	canary yellow	transparent	canary yellow

PHYSICAL AND MECHANICAL PROPERTIES

Hardness	ISO 868	80 Shore D
Glass transition temperature Tg	MO-117	>200 C
Tensile strength	ISO 527	58 MPa
Tensile rate	ISO 37	15%
Twist strength	ISO 178	115 MPa
Modulus of elasticity	ISO 178	2,100 MPa
Impact strength	ISO 178	35kJ/m ²
Linear shrinkage		8-9 mm/m