

Smooth-Cast® ONYX® Slow

Polyurethane

Smooth-On, Inc

Message:

Smooth-Cast ONYX® is a mercury-free urethane resin that cures quickly at room temperature to a deep black, solid plastic. ONYX® offers the convenience of a 1A:1B by volume mix ratio and has a very low viscosity, so it is easy to mix and pour. ONYX® has an ultimate shore hardness of 80D and offers higher physical properties and higher heat resistance vs. other general purpose resins.

Advantages that ONYX® offers over other resins; 1) if you desire a black casting, adding color pigment is not necessary, 2) cured plastic is ultra-black and darker than competitive black resins, 3) cured ONYX® plastic can be polished and buffed to a high gloss shine and 4) ONYX® offers higher heat resistance vs. competitive black resins, 5) unlike other black resins, ONYX® does not contain mercury and 6) ONYX® is less expensive vs. other black resins.

Applications include reproducing sculpture, making prototypes and potting / encapsulation. Because ONYX® is a fast curing resin and becomes hard quickly, it is also great for doing fast cold cast bronze, brass, copper, nickel/silver, etc.

General Information			
Features	High Heat Resistance		
	Low Viscosity		
Uses	Modeling Material		
Appearance	Black		
Processing Method	Casting		
	Encapsulating		
	Potting		

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.09	g/cm ³	ASTM D1475
Specific Volume	1.00	cm ³ /g	ASTM D1475
Cure Time (23°C)	1.5	hr	
Molding Shrinkage - Flow	1.2	%	ASTM D2566

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	80		ASTM D2240

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2580	MPa	ASTM D638
Tensile Strength	52.8	MPa	ASTM D638
Tensile Elongation (Break)	3.0	%	ASTM D638
Flexural Modulus	1970	MPa	ASTM D790
Flexural Strength	70.5	MPa	ASTM D790
Compressive Modulus	675	MPa	ASTM D695
Compressive Strength	78.6	MPa	ASTM D695

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	100	°C	ASTM D648

Thermoset	Nominal Value	Unit	Test Method
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Thermoset Components			
Part A	Mix Ratio by Weight: 120, Mix Ratio by Volume: 100		
Part B	Mix Ratio by Weight: 100, Mix Ratio by Volume: 100		
Pot Life (23°C)	5.0	min	ASTM D2471
Thermoset Mix Viscosity	100	cP	ASTM D2393
Post Cure Time (121°C)	4.0 to 6.0	hr	

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