

TinSil® 70 Series

DESCRIPTION: TinSil® 70 Series RTV Silicone Rubbers are condensation-cure, tin-catalyzed, flexible mold rubbers. TinSil products consist of a liquid Part B base and Part A accelerator, which, after mixing at the proper ratio by weight, cure at room temperature to rubbers with tough, knotty tear properties. TinSil molds have easy release properties and high temperature resistance. TinSil molds are excellent for casting polyester, epoxy and polyurethane resins, as well as for waxes and other materials where release-agent-free casting is needed.

TinSil 70-10 is the softest system and is used for very delicate castings. TinSil 70-25 is Polytek's most popular and versatile mid-range hardness silicone rubber. TinSil 70-39 is firm and has excellent tear properties making it popular for casting polyurethane forms and plastic prototype parts. TinSil 70-60 is stable at higher temperatures making it suitable for casting low melting metals. As a result of its high hardness, TinSil 70-60 has limited tear strength.

MODEL PREPARATION: See p. 40.

MIXING AND CURING: See p. 40. **CAUTION!** TinSil products release alcohol while curing. Alcohol can inhibit the surface cure of some polyurethanes. Before casting polyurethanes in a TinSil mold, alcohol can be evaporated by letting the mold sit in a warm location for 24 hours or by baking the mold for 4 hours at

~200°F. This loss of alcohol results in slight shrinkage of the rubber during cure (up to 1%). In cases where slight shrinkage cannot be tolerated, consider PlatSil rubbers.

USING THE MOLD: See p. 40. [Note: Molds made with excess catalyst may be subject to faster degradation on aging.]

ACCELERATING CURE SPEED: Use TinSil FastCat in place of any TinSil Part A in order to accelerate cure and shorten demold time. When using FastCat the working time is shorter, so care must be taken to avoid over-catalyzing. FastCat can be used in a range of 2-6 parts per 100 parts B. At 2 parts FastCat to 100 parts B, the working time and demold time is similar to that observed when using 10 parts of the appropriate TinSil Part A. At 3 parts FastCat per 100 parts B, the working time is reduced to ~20-30 minutes, with <8 hour demold. Experiment with a small mix first to determine the best amount of FastCat to use. Use of FastCat can shorten the library life of cured TinSil rubber.

THICKENING FOR BRUSH ON: TinSil 70 Series rubbers can be thickened with TinThix liquid thickener or with Cab-O-Sil® for brushing on a blanket mold. TinThix is a liquid additive that can be mixed into the Part B (before mixing with Part A) to achieve varying levels of thixotropy.

ACCESSORIES: See box on p. 41.

SAFETY: See p. 41.

	PHYSICAL PROPERTIES					
	70-10	70-20	70-25	70-30	70-39	70-60
Mix Ratio (By Weight)	1A:10B	1A:10B	1A:10B	2A:100B	1A:10B	5A:100B
Hardness, Shore A	10	20	25	30	40	60
Pour Time (min)	45	60	60	60	45	30
Demold Time @ 77°F (hr)	16	16	16	24	16	24
Color	Blue	Blue	Blue	Beige	Blue	Red
Mixed Viscosity (cP)	10,000	10,000	14,000	26,000	25,000	17,000
Specific Volume (in ³ /lb)	25.3	25.3	25.3	25.3	21.7	18
Specific Gravity	1.1	1.1	1.1	1.1	1.27	1.5
Shrinkage Upon Cure (%)	~0.3	~0.3	~0.3	~0.3	~0.3	~0.8

Product	PACKAGING				
	Unit Weight (lb)	Size		Net Weight (lb)	
		A	B	A	B
TinSil® 70-10, 70-20, 70-25, 70-39 Mix Ratio 1A:10B	1.0	4 oz	1 pt	0.1	0.9
	9.0	1 pt	1 gal	0.9	8.1
	44.0	1/2 gal	5 gal	4.0	40.0
	495	5 gal	55 gal	45.0	450
TinSil® 70-30 Mix Ratio 2A:100B	1.02	1 oz	1 pt	0.02	1.0
	8.3	4 oz	1 gal	0.20	8.1
	40.8	1 pt	5 gal	0.80	40.0
	448.8	1 gal	55 gal	8.8	440
TinSil® 70-60 Mix Ratio 5A:100B	1.05	1 oz	1 pt	0.05	1.0
	8.4	1/2 pt	1 gal	0.4	8.0
	42.0	1 qt	5 gal	2.0	40.0
	462	5 gal	55 gal	22.0	440