KE 1300T

Shin-Etsu Silicone

Moldmaking Silicone for the Best Reproduction Molds of Your Rapid Prototyped Part

THE MOLDMAKER'S CHALLENGE:

Produce a moldmaking silicone for stereolithographic generated parts that

- ☐ Will not damage the master
- ☐ Allows the molder to meet those critical deadlines that have no room for error
- ☐ Compatible with Cibatool® SL 5170, SL 5180 and SL 5190 series
- ☐ Provides multiple pulls per mold
- ☐ Offers visible air management during the pour
- ☐ Offers extremely low shrinkage
- ☐ Has good resin resistance

OUR SOLUTION:

Shin-Etsu Addition Curing, Clear, Moldmaking Silicones

SHIN-ETSU KE 1300T A clear, high strength, variable catalyst system, with no shrinkage. It is an economically priced moldmaking silicone ideal for the rapid prototyper.

GENERAL PROPERTIES

Before Cure	
Appearance	translucent
Mix Ratio, base:catalyst	10:1
Specific Gravity, mixed, 25ºC	1.07
Viscosity, mixed, 25ºC	75,000 cps
Pot life, 25ºC	1.5 hrs.

After Cure (24 hrs at 25ºC)	
Hardness	40 Shore-A
Tensile Strength	850 psi
Tear Strength	125 ppi
Elongation	400%
Linear Shrinkage	< 0.10%

RECOMMENDED CURE SCHEDULE

24 hr	at	25°C
120 min	at	50°C

60 min	at	100°C
20 min	at	150°C

CATALYST SELECTION CHART

	CATALYST				
PROPERTY	CAT 1300	CAT 1300L-2	CAT 1300L-3	CAT 1300L-4	CAT 1300L-5
Pot Life, hrs	1.5	16	2	2	2
Hardness, A	40	40	30	20	28
Tensile, psi	850	850	700	650	650
Tear, ppi	125	125	85	70	110
Elongation, %	340	340	425	600	500
Recommended Cure Condition	24 hr / 25°C	72 hrs / 25°C or 2 hrs / 100°C 1 hr / 150°C	24 hr / 25°C + postcure 1 hr / 50°C	24 hr / 25°C + postcure 1 hr / 50°C	24 hr / 25°C + postcure 1 hr / 50°C
Demold Time at 25°C	12-16 hrs	48 hrs	24 hrs	24 hrs	24 hrs

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KE 1300T

Feature	*Advantage*	*Benefit*
Clear	Inspect your uncured pour for air bubbles	Making a perfect mold on the first try saves time and money
	Visually inspect your master positioning	Making a perfect mold on the first try saves time and money
	Easy to see your master while cutting a one-piece mold	Recover expensive masters without damage
	Watch the resin fill the mold	Save time and money by cutting vent holes where needed
High Tear Strength	Long Mold Life	Save time and money by making fewer molds
Variable Catalyst System	Change the hardness and pot life	Lowers material costs by allowing a single base resin to be used for multiple jobs
Addition Cure	No cure shrinkage	Make better parts by exact reproduction of the master
	Excellent resin resistance	Save time and money by making fewer molds

Storage and Shelf Life

Shin-Etsu Moldmaking Silicones have a shelf life of 6 months from date of shipment when stored in original, unopened containers, at or below 90°F.

Cure Inhibition

Certain chemicals, curing agents, plasticizers and materials can inhibit cure. The most common are:

- ☐ Organo-tin and other organo-metallic compounds
- ☐ Silicone rubber containing organo-tin catalyst
- ☐ Sulfur, polysulfides, polysulfones and other sulfur-containing materials
- ☐ Amines, urethanes, and amine containing materials
- ☐ Unsaturated hydrocarbon plasticizers
- ☐ High acid content PVC

Should a substrate or material be a possible cause of inhibition, it is best to test a small sample for compatibility with the elastomer. The presence of liquid or uncured product at the interface between the suspect substrate and the cured elastomer is a good indication of cure inhibition.

Deairing

To eliminate voids within the rubber before cure, air entrapped during the mixing cycle must be removed. To accomplish this, place the mixture under a vacuum of 28-29 inches of vacuum. As full vacuum is applied, the material will "froth" and expand about 4 times its original volume, crest, and eventually recede back to its original level. (A film coating along the container sides should be evident above the original volume.) The deairation cycle is complete approximately 10 minutes after the frothing ceases. Should the container size used be inadequate for deairing the mixture, the vacuum may be broken during operation to reduce the bubble formation. To remove air without using a vacuum system, place the mixture in a freezer overnight. The silicone will stay liquid but will not react to cure. The air bubbles will slowly rise to the surface.

For more information contact your nearest authorized Shin-Etsu Distributor.

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