53 C Otis Street
West Babylon, NY 11704
Tel. 631-920-5079 Fax. 631-920-0503
E-mail SalesSET@optonline.net
www.SET-mfg.com

Trans Clear 40 Q

Description

Trans Clear 40 Q silicone rubber is a translucent two-component, addition reaction, platinum catalyzed system that cures at room temperature. It has a moderate durometer, superb physical properties, excellent release and good chemical resistance.

Applications

Trans Clear 40 Q is used to make molds where visual inspection is required. The combination of physical integrity and moderate hardness make it an excellent choice for prototyping. Due to its flexibility and ease in releasing, it performs well with expandable foam systems, maintaining its shape and detail for multiple castings.

Typical Properties

Color of Base	Translucent	Tear strength, ppi	120 ± 20
Color of Activator	Clear	Tensile strength, psi	600 ± 50
Viscosity, base, cps	100,000	Elongation, %	250 ± 25
Viscosity, mixed, cps	50,000 ± 10,000	Shrinkage, %	Nil
Specific gravity	1.08	Shelf Life(months)	6
Working time, hours	1 to 2		
Shore A hardness	45 ± 3		

Mixing Instructions

Mix 100 parts by weight of **Trans Clear 40 Q** Base with 10 parts by weight of **Trans Clear 40 Q** Activator in a container that will hold approximately 4 to 5 times the volume being used. Stir thoroughly either by hand or by mechanical mixing. Immediately after mixing, place the material in a vacuum chamber capable of 28 to 29 inches of mercury vacuum. The material will expand to approximately quadruple its original volume and then collapse. Maintain the vacuum for an additional 2 to 3 minutes and then remove. Carefully pour the catalyzed silicone rubber over the released pattern (MR-15 is recommended).

Curing

Vulcanization of the **Trans Clear 40 Q** takes place in 18 to 24 hours after mixing at normal room temperatures (70^{o}F to 75^{o}F). Heat can be used to accelerate the cure rate. Care must be taken to ensure that the master doesn't gas or give off vapors at the temperature used, since this can cause severe distortion of the mold surface. Some woods give off moisture and gas at relatively low temperatures causing failure in the mold making attempt.

Average cure times for one-half inch thick samples are listed below:

Temperature	70°F	90°F	125°F	150°F	200°F	250°F	300°F
Cure Time	18 to 24 hours	3.5 hours	1.5 hours	45 minutes	25 minutes	15 minutes	10 minutes

The **Trans Clear 40 Q** has a long room temperature work time, but the application of heat will cause this time to shorten. Cure rates can be accelerated at room temperature using Pt Accelerator (refer to Pt Accelerator data sheet for details). Heat accelerated cures and Pt Accelerator will cause some shrinkage and a slight decrease in the physical properties.

Cure Sensitivity

Trans Clear 40 Q may have its cure inhibited at the interface between the mold and the master. Models that have come in contact with tin catalyzed rubbers (the GI-Series) may show cure inhibition at the face of the mold. This can usually be prevented by thoroughly cleaning the model with naphtha or methylene chloride, releasing and checking the area by brushing on a small amount of catalyzed P-44 rubber. After 24 hours this film must be cured and non-sticky. In the event that the contamination still exists, the model should be cleaned again and a thin film of acrylic or nitrocellulose lacquer or base coat should be applied. This should serve as a barrier coat and allow a completely cured mold to be prepared. Other substrates such as clay containing sulfur or any other sulfur, amine, or tin contaminated materials will cause surface inhibition and in all cases a test should be run as outlined above to determine compatibility.

Silicone & Epoxy Technology
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