

Description

HydroSpan 400 is a unique single component, Flexible, 100% solids (contains no V.O.C.), polyurethane elastomeric compound. HydroSpan 400, when fully cured provides for simple method for reducing three dimensionally molded parts. Reduction of parts is done by simply molding the part with HydroSpan 400 to form a rubber master. After curing 30 minutes at room temperature the molded HydroSpan 400 part is removed from the mold and allowed to shrink at room temperature. Reductions from 55 % to 86% the original part can be made depending on how much water is added in the initial curing process. Full reduction of parts can be achieved in 5 to 14 days depending on cross section thickness of the part. Thicker cross sections take longer while thinner cross sections require less time.

Application

HydroSpan 400 is packaged in a convenient 1 Quart, 1 gallon or 5 gallon units Liquid containers should be maintained at 72° F for best results. Warmer temperatures will decrease working life; cooler temperatures will increase application time. Choose a work area that is free from visible moisture and capable of maintaining a temperature range of 70° F to 80° F. The liquid component of HydroSpan 400 should be temperature stabilizing to 72 F before beginning work.

Gloves, and eye protection should be worn during application (see Industrial Polymers material safety data sheet for more details).

Mix Ratio

Mix HydroSpan 400 with cold water (40F-50F) to extend working life. See Polymer / water mixing chart to determine the amount of water to use to achieve a specific reduction .Use a maximum batch size of no more than one gallon total mix of HydroSpan 400 / Water.

Pour both the water and HydroSpan 400 into a clean plastic container and quickly mix using a spatula for batch sizes of ½ gallon or less or less mix by hand with a flat spatula . for larger mixes use a jiffy mixer and electric drill Take care to scrape bottom of the container to include all of the unmixed HydroSpan 400 polymer (do not use square or round rod as mixers).

Mix for about 30 seconds and quickly pour into the prepared mold. After about 3 to 5 minutes HydroSpan 400 cures to a firm white gel.

Mold preparation HydroSpan 400 can be molded in almost any kind of mold as long as it is fully prepared before filling with uncured polymer. Release agents used in the molding process inhibit the evaporation of water thus slow down the reduction process of the part. All waxes and release agents should be thoroughly removed with mineral spirits or soap and water before the part set aside to reduce. Parts molded in silicone mold require no preparation before soaking. All surfaces should be free of dirt and visible moisture. Depending on relative humidity and temperature, parts can be handled in 30 minutes. .

Reduced Parts Once the HydroSpan 400 parts have reduced to the desired size a final mold should be made as soon as possible. If molds are made from flexible RTV urethane or silicone rubber a light layer of Vaseline petroleum jelly should be applied to prevent any unwanted reaction of the absorbed water in the HydroSpan 400.

Reduced HydroSpan 400 parts maintain their reduced size if stored in a dry environment.

Increasing the Working time: To increase the amount of working time as water solution of the HydroSpan 400 Retarder along with the Gel Reinforcer is recommended . First make the following solution then combine it with the HydroSpan 400 resin to achieve the desired working time.

Premix by weight	
Water (room temp)	72 parts
Acrylic reinforcer	20 parts
Retarder	8 parts

HydroSpan 400

Reducing Urethane Polymer

10/10

Water curing solution by weight (water at 40F) no retarder

HydroSpan 400 resin / water solution	Gel Time	Size of finished part Compared to Master (100%)
1 Part / 1 Part	1 min 0 sec	59%
1 Part / 2 Parts	1 min 10 sec	45%
1 Part / 3 Parts	1 min 15 sec	36%
1 Part / 4 Parts	1 min 15 sec	30%
1 Part / 5 Parts	1 min 15 sec	27%
1 Part / 6 Parts	1 min 20 sec	23%
1 Part / 7 Parts	1 min 19 sec	21%
1 Part / 8 parts	1 min 30 sec	19%

Greater than 8 parts water is not recommended

Water curing solution by weight (water at 40 F) with retarder

(pre-mix)

Water 72 Parts
Reinforcer 20 Parts
Retarder 8 Parts

HydroSpan 400 resin / water solution	Gel Time	Size of finished part Compared to Master (100%)
1 Part / 1 Part	1 min 37 sec	59%
1 Part / 2 Parts	1 min 47 sec	45%
1 Part / 3 Parts	2 min 35 sec	36%
1 Part / 4 Parts	3 min 30 sec	30%
1 Part / 5 Parts	4 min 45 sec	27%
1 Part / 6 Parts	11 min 45 sec	21%
1 Part / 7 Parts	12 min 19 sec	21%
1 Part / 8 parts	13 min 30 sec	19%

Greater than 8 parts water is not recommended