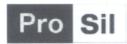
reinhard oil







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Chemical resistance of RTV silicone rubber

In answer to questions regarding the effects of solvents and industrial chemicals on RTV silicone rubber, the following data have been compiled.

Silicones are, in general, chemically inert and are attacked by only a very few common materials; among them are concentrated sulphuric acid, hydrofluoric acid and, under long-term exposure, high-pressure steam.

Like any elastomer, RTV has a tendency to physically absorb those materials with a solubility parameter near its own. This absorption may cause the rubber to swell and soften slightly. In a few applications, this volume increase is advantageous. For example, a silicone rubber gasket exposed to certain solvents will swell to form a tighter seal.

The change undergone by silicone rubber in contact with an absorbed solvent is primarily physical. After the solvent has completely evaporated, the RTV will return to its original physical and electrical properties. To assure complete evaporation a bake-out at elevated temperature may be necessary.

The following table shows RTVs resistance to various common materials. It indicates the volume change which may be expected from RTV submerged in a chemical or solvent for one week at room temperature. The following definitions for resistance were arbitrarily assigned.

Material	Rating	Material	Rating
Acids		Hydraulic fluids	
Citric	Excellent	Hollingshead H-2	Exceller
Hydrochloric, 3 per cent	Excellent	Hollingshead H-2, 70 hours at 212°F	Goo
Hydrochloric, concentrated	Excellent	MIL-L-7808 (diester fluid), 70 hours at 300°FFair-God	
Hydrofluoric	Disintegrates	Skydrol 500	Fa
Phosphoric, dilute	Excellent	Skydrol 8000	
Sulphuric, 10 per cent	Excellent	Skydrol 8000 (70 hours at 212°F)	Exceller
Sulphuric, concentrated	Disintegrates	Silicate base	Fa
Tannic	Excellent		
Nitric, concentrated	Good-Excellent	Oils	
Nitric, 7 per cent	Excellent	ASTM No. 10.1 (aliphatic). 70 hours at 300 FExcelle	
Acetic, concentrated	Excellent	ASTM No. 30.1 (aromatic), 70 hours at 30	
Acetic, 5 per cent	Excellent	Castor 0.1	
Bases		Pyranol 1476	
Ammonium hydroxide 10 per cent	Excellent	Pyranol 1476 (70 hours at 350°F)	
Ammonium hydroxide, concentrated		Diester oils	
Potassium hydroxide		Diester oils (70 hours at 350°F)	
Sodium hydroxide 1 per cent		Linseed oil	
Sodium hydroxide 20 per cent		Mineral oil	
Sodium hydroxide 50 per cent		Silicone, SF 96 (100)	
norganic chemicals		Silicone, SF 96 (100), 70 hours at 300°F	
Anhydrous ammonia	Excellent	Viscasil 60000 CSKS	Good-Excelle
Sodium chloride, 10 per cent		10,000-100,000, 60000 CSTKS	0
Hydrogen peroxide, 3 per cent		(70 hours at 300°F)	God
Sodium carbonate, 2 per cent		Solvents	
Sodium carbonate, 20 per cent		Acetone	F;
Water		Butyl alcohol	
Water (70 hours at 212°F)		Carbon tetrachloride	
Organic chemicals		Diacetone alcohol	
Detergents	Excellent	Ethyl alcohol	
Freon 12		Gasoline	
Freon 114		Jet fuel, JP4	
Methyl chloride		Mineral spirits	
Tricresyl phosphate		Toluene	







