

Properties of VYCOR[®] Code 7913 96% Silica High Temperature Glass



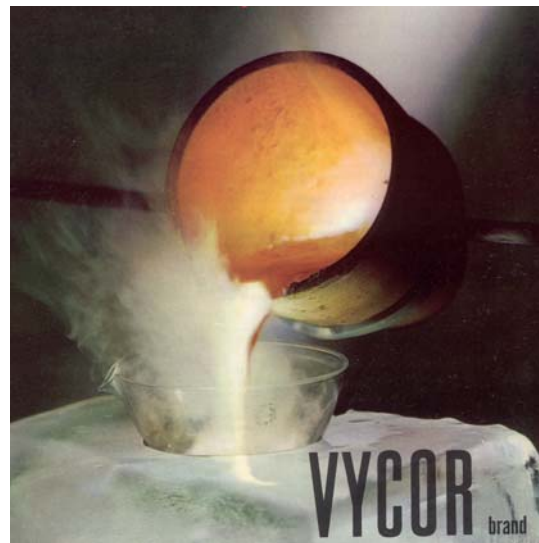
Introduction

VYCOR glassware has several exceptional properties. Since it is 96% silica, it is similar to fused quartz in its thermal properties. It may be used at much higher temperatures than Code 7740 borosilicate glass and will withstand considerably more thermal shock since its rate of thermal expansion is only 25% of PYREX[®] borosilicate glass. VYCOR glassware can be used continuously at 900°C, and intermittently to 1200°C. Being of a very simple composition, only five elements, it is used for very precise analytical work (Table 1).

This glass is initially formed as a borosilicate type glass. It is then subjected to a chemical treatment that removes most of the elements in the glass except silica (SiO₂). Glass is then reheated to eliminate the microscopic holes caused by the chemical treatment. Only quartz has higher silica content.

Applications

VYCOR evaporating dishes, crucibles, immersion heaters, tubing and beakers have been designed to withstand very high temperatures or thermal shock. VYCOR glass tubing can be sealed to Code 7740 glass with #6466 graded seals. It also offers better transmittance in the UV and infra red range compared to borosilicate glasses.



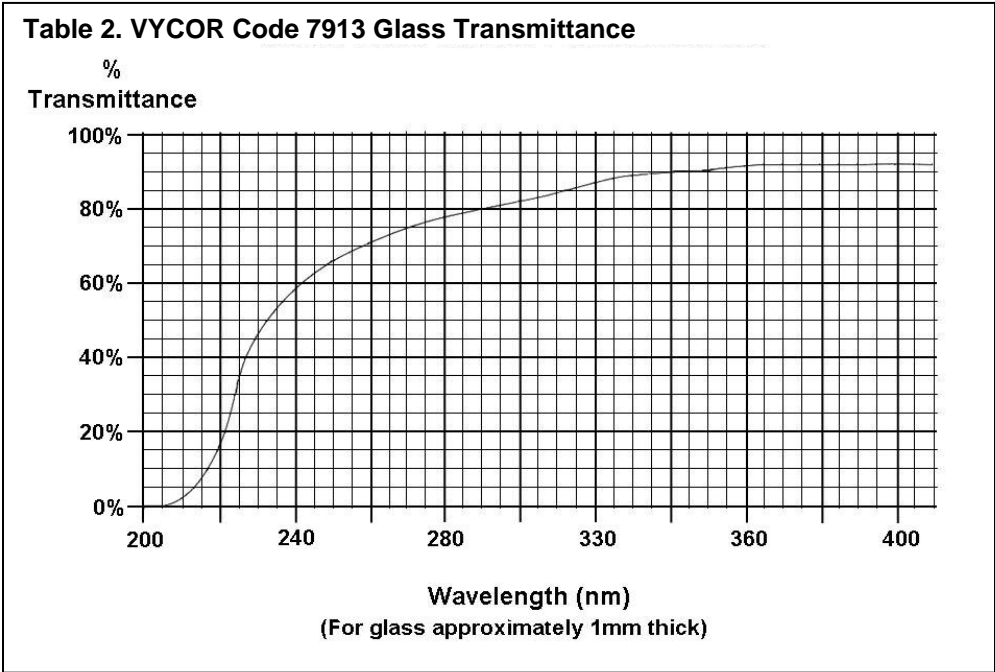
VYCOR provides the most temperature and chemically resistant glassware that is available.

Table 1. Physical Properties and Chemical Composition of VYCOR® Code 7913 Glass

Properties		Composition (%approx.)	
Coefficient of Expansion	7.5 x 10 ⁻⁷ cm/cm/°C	SiO ₂	96.4%
Strain Point	890°C	B ₂ O ₃	3.0%
Anneal Point	1020°C	Al ₂ O ₃	0.5%
Softening Point	1530°C	Miscellaneous Traces	0.1%
Density	2.18 g/cm ³	Warnings	
Youngs Modulus	6.73 10 ³ kg/mm ²		
Refractive Index	1.458 @ Sodium D Line		
Temperature Limits	1200°C (Extreme Service)	1. Do not use hydrofluoric acid in any glass product. 2. Alkalis at elevated temperatures will etch glass.	
	900°C (Normal Service)		

Light Transmittance

The visible light transmittance (400-760nm) of Code 7740 glass is 92% at 2mm thickness. (See Tables 2, 3 and 4 for additional information. It continues to maintain high transmission (over 90% up to 2600nm) into the infra red range.



For additional product or technical information, please visit our web site at www.corning.com/lifesciences or call at 1.800.492.1110. International customers can call at 978.635.2200.

