

GLASS NAME: S-8072

Equivalent to Sandia's CABAL-12

GLASS TYPE: Boroaluminate

APPLICATIONS: Lithium-resistant sealing glass used for hermetic seals in lithium batteries.

Also has good expansion match for sealing to aluminum oxide.

AVAILABLE FORMS: Cast Block, Rolled Ribbon, Air Quenched

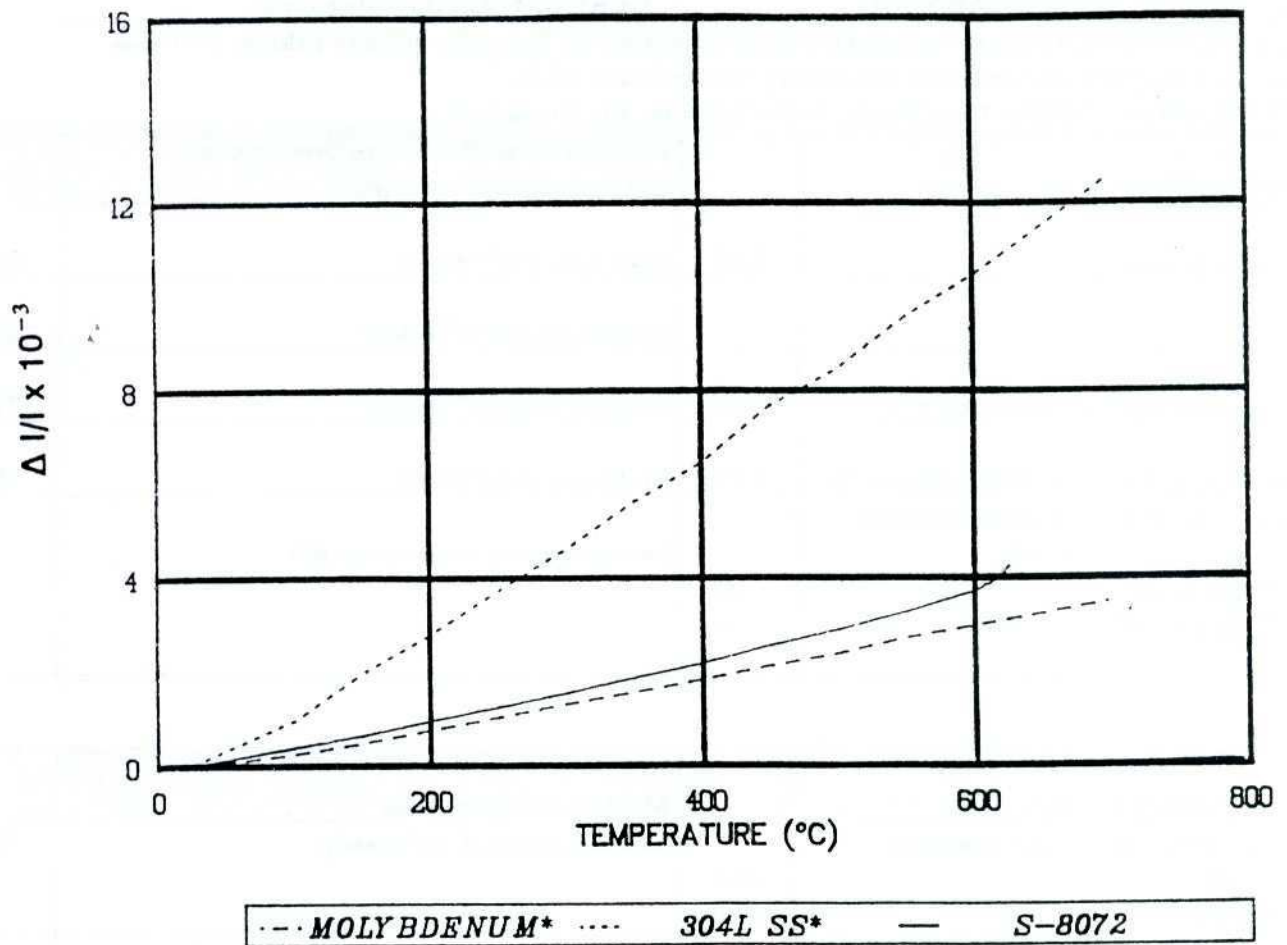
Physical Properties		Temperatures (°C) Corresponding to Characteristic Viscosities	
Density (g/cm <sup>3</sup> )	2.60	Strain Point (10 <sup>14.5</sup> Poise):	612
		Annealing Point (10 <sup>13</sup> Poise):	628
Transformation Temperature, T <sub>g</sub> (°C):	617	Softening Point (10 <sup>7.6</sup> Poise):	718
Thermal Conductivity at 90°C, λ [W/(m•K)]:	1.09	Working Point (10 <sup>4</sup> Poise):	798
Linear Coefficient of Thermal Expansion, α (x10 <sup>-7</sup> /K)		See expansion curves on reverse side:	
α 20° to 300°C	62		
α 20°C to T <sub>g</sub> :	76		

Electrical Properties		Mechanical Properties	
Log of Volume Resistivity in ohm•cm at 350°C:	13.0	Young's Modulus, E (10 <sup>3</sup> N/mm <sup>2</sup> ):	94
at 450°C:	11.0		
		Poisson's Ratio, μ:	0.29
Dielectric Properties for 1MHz at 25°C		Specific Thermal Stress, $\varphi = \frac{\alpha \cdot E}{1 - \mu}$ [N/(mm <sup>2</sup> K)]	0.82
Dielectric Constant, ε <sub>r</sub> :	7.1		
Dissipation Factor, tan δ (x10 <sup>-4</sup> ):	17		
		Knoop Hardness (N/mm <sup>2</sup> ) corresponding to 1.9613 N load:	5390

Optical Properties	
Index of Refraction at 587nm, n <sub>d</sub> :	1.585
Stress Optical Coefficient at 546 nm, K = 10 <sup>-6</sup> mm <sup>2</sup> /N	

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## EXPANSION CURVE OF COMPONENTS OF A SEAL



**An example of S-8072 application is the formation of compression seals with Molybdenum feed throughs and 304L Stainless Steel housings.**

\*Expansion values for the metal components have been provided by Sandia National Laboratories.