

## ALTRA® KVS

### High Temperature Vacuum Formed Boards and Shapes

**ALTRA® KVS** high temperature vacuum formed products are available in formulations for service temperatures up to 1800°C. **ALTRA® KVS** boards and shapes feature low thermal conductivity, excellent thermal shock resistance, high purity, good machinability and good density uniformity. **ALTRA® KVS** is formed from alumina and/or alumino-silicate fibers with appropriate inorganic and organic binders. **ALTRA® KVS** products are available unfired or pre-fired, resulting in an organic free composition.



Properties	Units	KVS 121	KVS 124	KVS 141	KVS 144	KVS 161	KVS 164	KVS 164/302	KVS 174/400	KVS 184/400					
<b>Classification Temperature</b>	°F	2300	2300	2600	2600	3000	3000	3000	3092	3272					
	°C	1260	1260	1430	1430	1650	1650	1650	1700	1800					
<b>Service Temperature</b>	°F	2012	2012	2372	2372	2732	2732	2912	3092	3272					
	°C	1100	1100	1300	1300	1500	1500	1600	1700	1800					
<b>Density</b>	lbs/ft <sup>3</sup>	18	18	18	18	18	18	18	25	25					
	(kg/m <sup>3</sup> )	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(400)	(400)					
<b>Organic Content</b>	Wt%	4	0	4	0	4	0	0	0	0					
<b>Linear Shrinkage</b> 24 hrs @ Temperature "+" indicates growth	%	3% @ 1100°C	2% @ 1100°C	3.7% @ 1250°C	2% @ 1250°C	2% @ 1500°C	1% @ 1500°C	+0.5% @ 1500°C	+0.2 @ 1600°C	0.1% @ 1700°C					
							3% at 1600°C	2% at 1600°C	+1.0 at 1600°C	0.3% @ 1700°C	0.8% @ 1800°C				
<b>Chemical Composition</b>	%	Al <sub>2</sub> O <sub>3</sub> SiO <sub>2</sub>	50	50	55	55	65	65	78	81					
			49	49	44	44	34	34	22	19	20				
<b>Thermal Conductivity</b>	BTUin/hrft <sup>2</sup> °F (W/mK)	752°F (400°C)	0.62(0.09 )	0.62(0.09 )	0.62(0.09 )	0.62(0.09 )	1.18(0.17 )								
		1112°F (600°C)									0.83(0.12 )	0.83(0.12 )	0.83(0.12 )	0.83(0.12 )	1.25(0.18 )
		1472°F (800°C)									1.04(0.15 )	1.04(0.15 )	1.04(0.15 )	1.04(0.15 )	1.39(0.20 )
		1832°F (1000°C)									1.32(0.19 )	1.32(0.19 )	1.32(0.19 )	1.32(0.19 )	1.80(0.26 )
		2192°F (1200°C)									1.73(0.25 )	1.73(0.25 )	1.73(0.25 )	1.73(0.25 )	2.36(0.34 )
		2552°F (1400°C)									2.36(0.34 )	2.36(0.34 )	2.15(0.31 )	2.15(0.31 )	3.05(0.44 )
											1.18(0.17 )	1.18(0.17 )	1.18(0.17 )	1.18(0.17 )	1.18(0.17 )
											1.25(0.18 )	1.25(0.18 )	1.25(0.18 )	1.25(0.18 )	1.25(0.18 )
											1.39(0.20 )	1.39(0.20 )	1.39(0.20 )	1.39(0.20 )	1.39(0.20 )
											1.80(0.26 )	1.80(0.26 )	1.80(0.26 )	1.80(0.26 )	1.80(0.26 )

The test data shown are based on average results on production samples and are subject to normal variation on individual tests. The test data cannot be taken as minimum or maximum values for specification purposes. ASTM test procedures used when applicable.