

## ALTRA<sup>®</sup> KVS

### High Temperature Vacuum Formed Boards and Shapes

**ALTRA<sup>®</sup> KVS** high temperature vacuum formed products are available in formulations for service temperatures up to 1800°C. **ALTRA<sup>®</sup> KVS** boards and shapes feature low thermal conductivity, excellent thermal shock resistance, high purity, good machinability and good density uniformity. **ALTRA<sup>®</sup> KVS** is formed from alumina and/or alumino-silicate fibers with appropriate inorganic and organic binders. **ALTRA<sup>®</sup> 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> (kg/m <sup>3</sup> )	18 (300)	18 (300)	18 (300)	18 (300)	18 (300)	18 (300)	18 (300)	25 (400)	25 (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 49	50 49	55 44	55 44	65 34	65 34	78 22	81 19	80 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)	1.18(0.17)	0.76(0.11)	0.97(0.14)	0.97(0.14)
		1112°F (600°C)	0.83(0.12)	0.83(0.12)	0.83(0.12)	0.83(0.12)	1.25(0.18)	1.25(0.18)	0.97(0.14)	1.18(0.17)	1.18(0.17)
		1472°F (800°C)	1.04(0.15)	1.04(0.15)	1.04(0.15)	1.04(0.15)	1.39(0.20)	1.39(0.20)	1.25(0.18)	1.39(0.20)	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)	1.80(0.26)	1.59(0.23)	1.66(0.24)	1.73(0.25)
		2192°F (1200°C)	1.73(0.25)	1.73(0.25)	1.66(0.24)	1.66(0.24)	2.36(0.34)	2.36(0.34)	1.94(0.28)	1.94(0.28)	2.01(0.29)
		2552°F (1400°C)	2.36(0.34)	2.36(0.34)	2.15(0.31)	2.15(0.31)	3.05(0.44)	3.05(0.44)	2.36(0.34)	2.43(0.35)	2.29(0.33)

- ▲ All **ALTRA<sup>®</sup>** grades are available in boards, tubes and other vacuum formed shapes
- ▲ Standard Board Size: 24” x 36”, Thickness 1”, 1 ½ “ and 2”
- ▲ Other board sizes and thickness available upon request