

**Bales, Paul A (B6P)**

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**From:** Moody, Ken [kmoody@thermalceramics.com]  
**Sent:** Thursday, December 09, 2004 12:31 PM  
**To:** 'mailto:balespa@y12.doe.gov'  
**Subject:** RE: Coefficient of thermal expansion for Kaolite 1600

Paul,

The Thermal Expansion for Kaolite 1600 is  $5.04 \times 10^{-6}$  in/in/°F which is what was quoted to you earlier.

If you need additional help please contact me by email

Regards,

Ken

-----Original Message-----

**From:** Bales, Paul A (B6P) [mailto:balespa@y12.doe.gov]  
**Sent:** Thursday, December 09, 2004 9:11 AM  
**To:** 'tceramics@thermalceramics.com'  
**Subject:** Coefficient of thermal expansion for Kaolite 1600

Dear Sir/Madam:

I am an engineer at BWXT Y-12 (Y-12 National Security Complex) in Oak Ridge, TN. We use Kaolite 1600 in several shipping package applications (for impact limiting and thermal protection). I am in need of a material property (linear coefficient of thermal expansion) that is not included in your material data sheet available online.

One of our engineers (R. E. Oaks) here at Y-12 received a fax from someone (J. Street) of Thermal Ceramics, Inc. dated 1/12/97 that stated that the average coefficient of thermal expansion for Kaolite 1600 is  $5.039 \times 10^{-6}$  in/in/°F. This fax has been referenced in several calculations generated here at Y-12; however, I have been unable to locate an actual copy of this fax.

Could an engineer from Thermal Ceramics send me a fax or e-mail with this (or an updated) value for the linear coefficient of thermal expansion for Kaolite 1600 as well as a reference temperature? If temperature-dependent information is available, please provide.

Thank you for your help.

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**Paul A. Bales**  
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This document has been reviewed by a Y-12 DC/UCNI-RO and has been determined to be UNCLASSIFIED and contains no UCNI. This review does not constitute clearance for Public Release.

Name: War Thomas Date: 09/24/09

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