Linear Thermal Expansion of Solid Substances

$100^{D}L_T/^{L}293 = A + B(10^{-4}T) + C(10^{-4}T)^2 + D(10^{-4}T)^3$ (T in K)

	M.P., K	A	B	C	D	Note
Al_2O_3 (hex.)	2327	-0.180	+5.494	+22.520	-28.940	1
CaO	3200	-0.321	+10.590	+13.100	-14.050	
Cr_2O_3 (hex.)	2603	-0.280	+10.380	-31.220	+106.200	2
Fe_2O_3 (trig.)	1838	-2.537	+7.300	+49.640	-114.000	3
MgO	3125	-0.326	+10.400	+25.810	-28.340	
SiO_2 (lo qtz.)	tr.-873	-0.236	+6.912	+0.556	+1312.00	4
Sio_2 (hi qtz.) tr.	1743	+1.040	+0.068	+11.660	+18.000	Est.
SiO_2 (vitr.)	cr.-1273	-0.015	+0.397	+4.666	-34.460	
ZrO_2 (monocl.)	2988	-0.314	+13.040	-90.920	+408.400	5
$Al_6Si_2O_{13}$	2193	-0.0929	+2.580	+21.530	-45.720	
$CaAl_2O_4$	1873	-0.107	+2.578	+39.680	-90.770	
Ca_2SiO_4	2403	-0.345	+11.260	+16.560	+27.330	
$MgAl_2O_4$	2408	-0.183	+5.456	+28.060	-41.810	
$Mg_2Al_4Si_5O_{18}$	~1773	+0.00911	-0.912	+20.640	-3.921	6
$MgCr_2O_4$	2673	-0.176	+5.822	+5.580	+23.360	
$MgFe_2O_4$	2023	-0.218	+6.003	+52.560	-94.040	
Mg_2SiO_4	2183	-0.238	+7.166	+33.810	-37.970	
Mg_2TiO_4	-2100	-0.249	+8.294	+4.074	+94.300	
$ZrSiO_4$	2673	-0.136	+5.337	-30.420	+209.400	
AIN (hex.)	-2500	-0.0809	+1.806	+31.760	-72.560	7
B_4C (rhomboh.)	2623	-0.114	+3.523	+12.660	-5.085	8
BN	subl.~3273	-0.00133	-1.278	+49.110	-86.350	
SiC	dec.~2923	-0.0991	+2.970	+13.880	-15.480	
TiC	~3410	-0.177	+5.710	+11.740	+2.412	
C (graph) II	~3900	-0.0550	+1.552	+12.050	-10.330	9
C graph I	~3900	-0.1580	5.651	-8.850	+35.550	9
C (vitr.)	cr.~2700	0.0890	+3.015	+1.286	+17.240	
Fe	1808	-0.289	+7.350	+93.300	-314.000	10

Notes:
1-Cryst. exp. c/a ~1.1 2- Cryst. exp. a/c ~1.3
3- Cryst. exp. a/c ~1.26 4- Cryst. exp. a/c ~1.58
5- Cryst. exp. c/b ~2.5 6- Cordierite refractory
7- Cryst. exp. a/c ~1.18 8- Cryst. exp. ~isotrop.
9- Grade ATJ, parallel and perpendicular to the textural “grain,” respectively. Cryst. exp. c/a ~10.
10- Numerous steels and SS agree with Fe within ~+/-15%