No. 1C-c34 $PbTiO_3$–$PbZrO_3$–$Pb(Mg_{1/3}Nb_{2/3})O_3$

1b	Phase diagram: Fig. 1C-c34-001, Fig. 1C-c34-002.	
3a	Lattice constant: see Unit cell parameter: Fig. 1C-c34-003.	65Ouc
5a	Dielectric constant: Fig. 1C-c34-004, Fig. 1C-c34-005. Dielectric constant for Sr and Zn doped substance: Fig. 1C-c34-006.	
c	Remanent polarization and coercive field: Table 1C-c34-001.	
7a	Electromechanical properties: Fig. 1C-c34-007, Fig. 1C-c34-008.	

Table1C-c34-001. $Pb_{0.96}Sr_{0.04}[(Zr_{1-y}Ti_y)_{0.74}(Mg_{1/3}Nb_{2/3})_{0.20}(Zn_{1/3}Nb_{2/3})_{0.06}]O_3$. The coercive field and remanent polarization at room temperature [91Wan].

y	E_c [$\cdot 10^5$ Vm^{-1}]	P_r [$\cdot 10^{-2}$ Cm^{-2}]
44	6.8	13
47	6.5	21
50	7.5	25
51	7.5	24
52	8.0	21
54	10.0	20
57	12.5	19

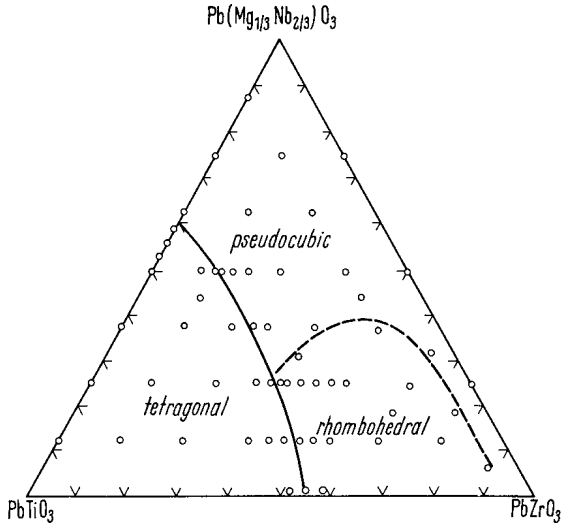

Fig. 1C-c34-001. $PbTiO_3$–$PbZrO_3$–$Pb(Mg_{1/3}Nb_{2/3})O_3$. Phase diagram [65Ouc].

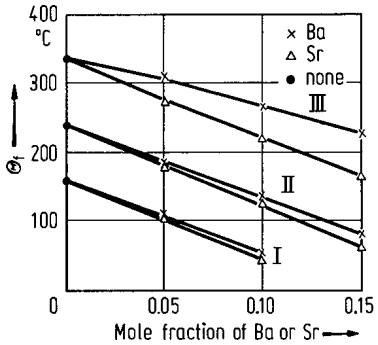

Fig. 1C-c34-002. $Pb[(Mg_{1/3}Nb_{2/3})_xTi_yZr_z]O_3$ (x+y+z = 1) (ceramics partially substituted by Ba or Sr). Θ_f vs. mole fraction of Ba or Sr [68Ouc]. Parameter: composition. I: x = 0.68, y = 0.32, z = 0; II: x = 0.375, y = 0.36, z = 0.265; III: x = 0.125, y = 0.44, z = 0.435.

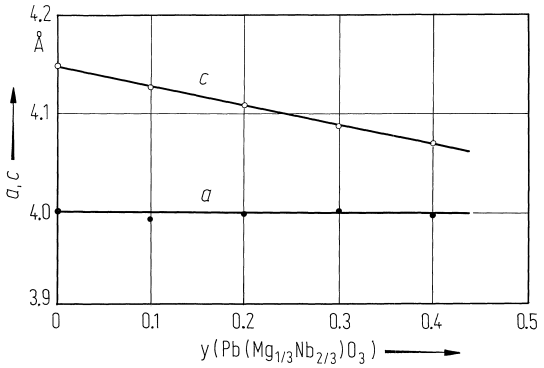

Fig. 1C-c34-003. $PbTiO_3$–$PbZrO_3$–$Pb(Mg_{1/3}Nb_{2/3})O_3$ (ceramics). *a*, *c* vs. y [86Kak]. y: molar fraction of $Pb(Mg_{1/3}Nb_{2/3})O_3$ in $(1-y)Pb(Zr_{0.3}Ti_{0.7})O_3 \cdot y\ Pb(Mg_{1/3}Nb_{2/3})O_3$.

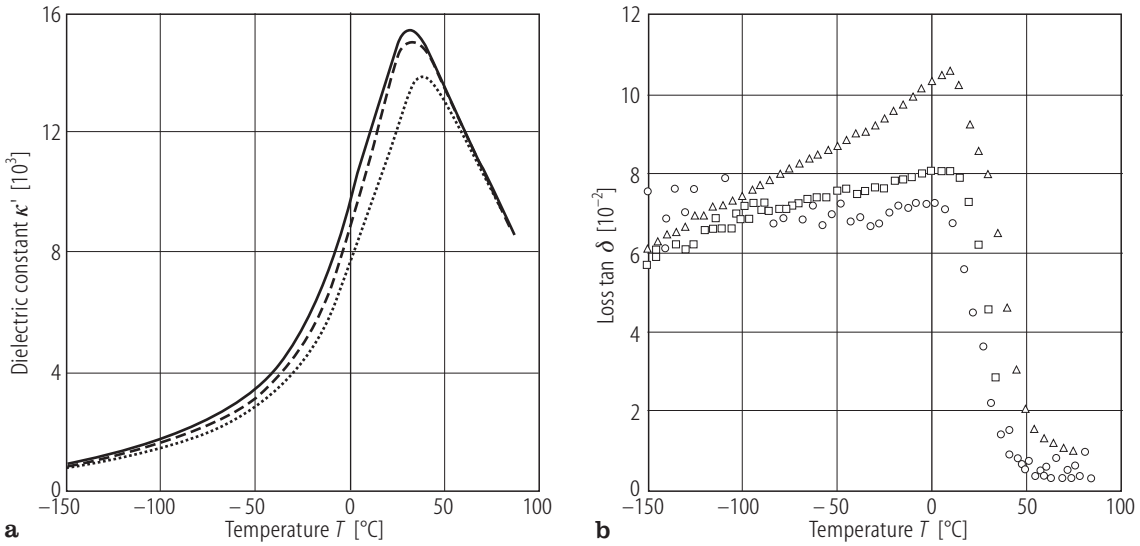

Fig. 1C-c34-004. 0.9 $Pb(Mg_{1/3}Nb_{2/3})O_3 \cdot 0.1\ Pb(Zr_{0.40}Ti_{0.60})O_3$ (ceramics). κ', $\tan\delta$ vs. T [94Vil]. Parameter: f. Circles, solid line: f = 1 kHz. Squares, dashed line: 10 kHz. Triangles, dotted line: 100 kHz.

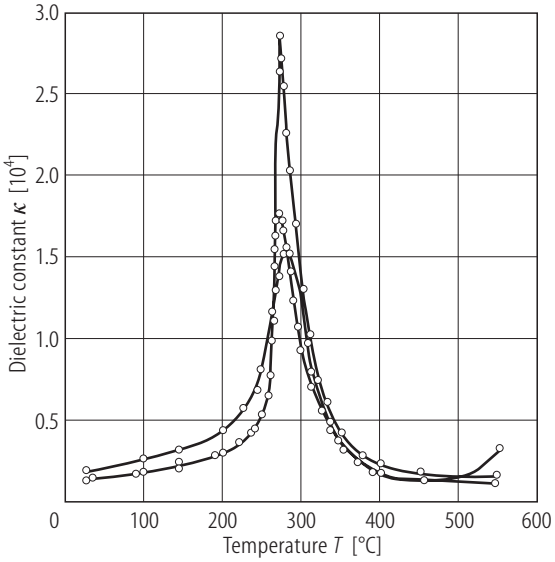

Fig. 1C-c34-005. $Pb[(Zr_{0.46}Ti_{0.54})_{0.8}(Mg_{1/3}Nb_{2/3})_{0.2}]O_3$ (ceramics). κ vs. T [92Kak]. f = 1 kHz. Different curves correspond to different methods of preparation.

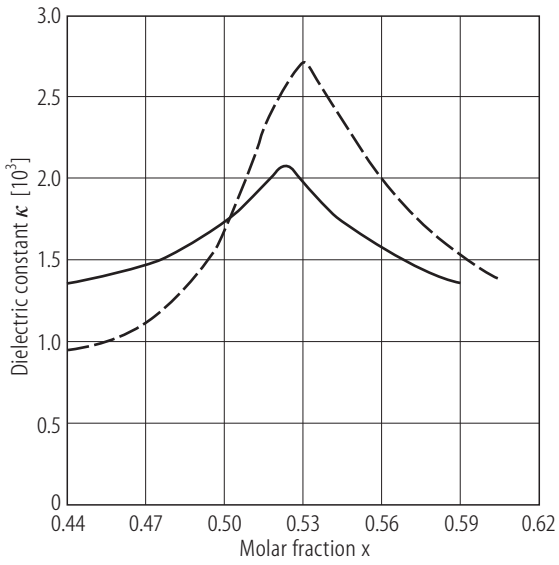

Fig. 1C–c34–006. $(Pb_{0.96}Sr_{0.04})[(Zr_{1-x}Ti_x)_{0.74}(Mg_{1/3}Nb_{2/3})_{0.20}(Zn_{1/3}Nb_{2/3})_{0.06}]O_3$ (ceramics). κ vs. x [91Wan]. T = RT. Full line: before poling. Dashed line: after poling.

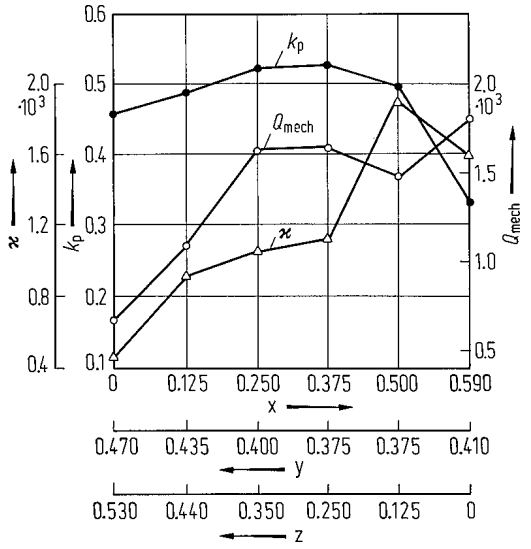

Fig. 1C-c34-007. $Pb[(Mg_{1/3}Nb_{2/3})_xTi_yZr_z]O_3$ (x+y+z = 1) (ceramics with 0.5 wt% MnO_2 addition). κ, k_p, Q_{mech} vs. x, y, z [66Ouc]. f = 1 kHz for κ. Note that the composition scale is not along a straight line on the ternary diagram.

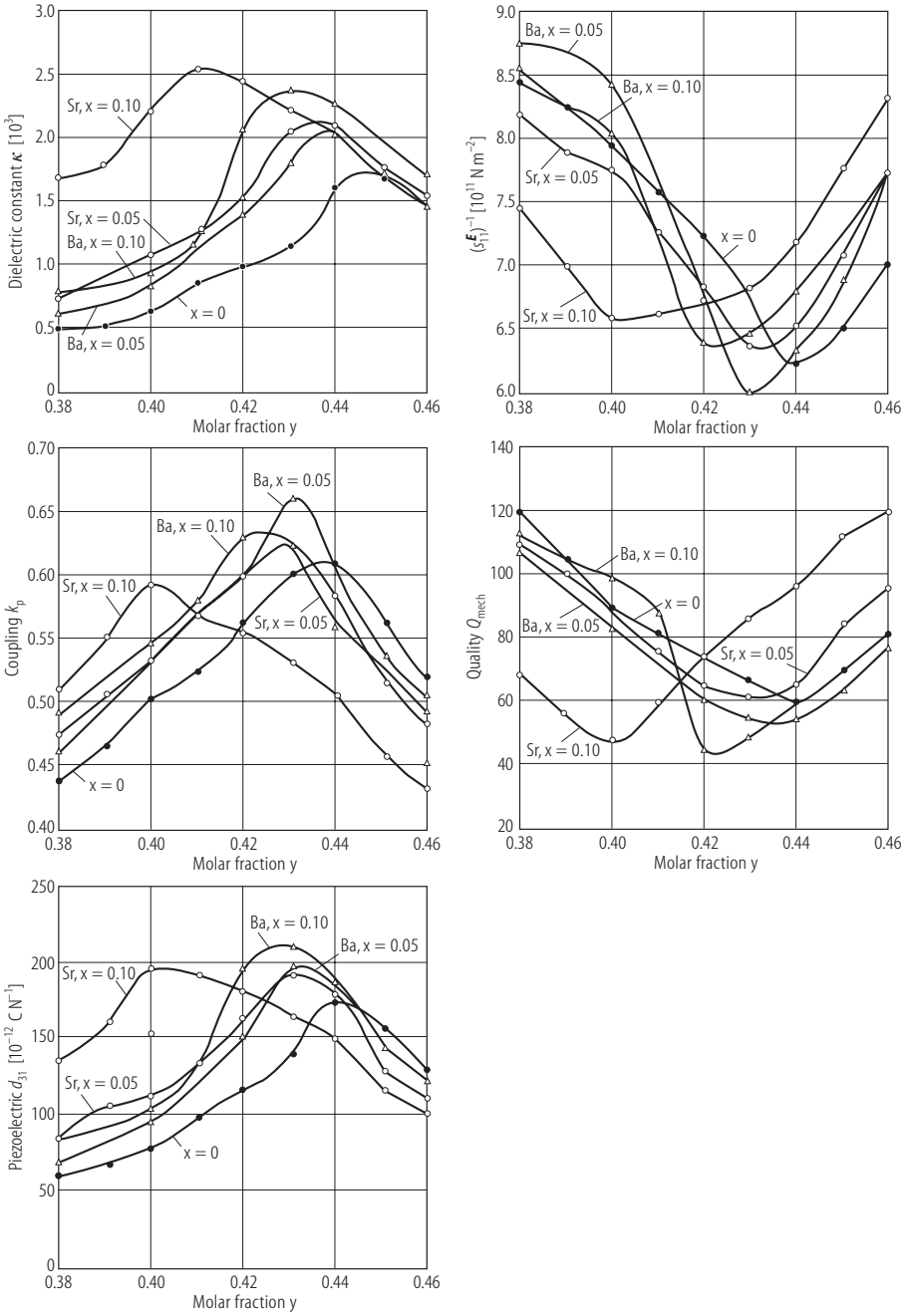

Fig. 1C-c34-008. $(Pb_{1-x}A_x)[(Mg_{1/3}Nb_{2/3})_{0.125}Ti_yZr_{0.875-y}]O_3$ (A = Ba, Sr ceramics). κ, k_p, d_{31}, $\left(s_{11}^E\right)^{-1}$, Q_{mech} vs. y [68Ouc]. Parameter: x. f = 1 kHz for κ.

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