

KTN ($\text{KTa}_x\text{Nb}_{1-x}\text{O}_3$) $x = 0 - 1$

High Performance Materials for Optical and Electrical Applications

Features

- ✓ Mutual Characteristics both KTaO_3 and KNbO_3
- ✓ Available for Custom Request of x



KTN Single Crystal

Properties

Applications

Ferroelectric

Large Dielectric Constants

Capacitor, Resonator

Piezoelectricity and
Pyroelectricity

Transducer, Actuator, Optical
Detector

Large Electro-Optic Effects
by Pockels Effect

EO Switch, Photorefractive
Devices

Ta:Nb Ratio x

Paraelectric

by Kerr Effect

Optical Deflector, Vari-Focal
Lens

Large Refractive Index

Ball Lens

※ KTN crystals are products of NTT Advanced Technology Corp.

OXIDE

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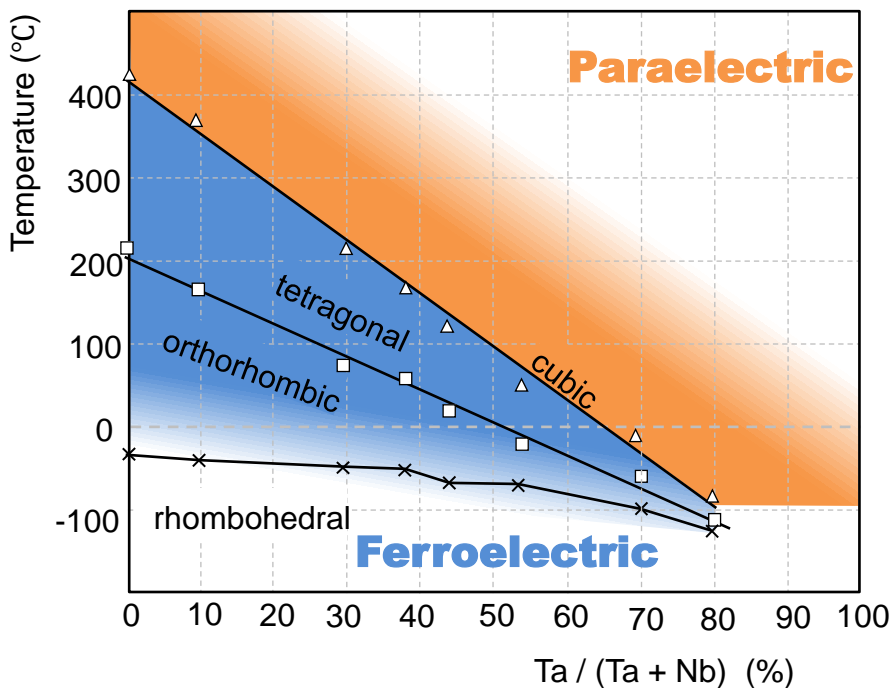


Oxide Yamanashi

Properties

Transmittance:	Nearly 100% @488 - 3500nm
Dielectric Constant:	Equal Level to BaTiO ₃
Electro-Mechanical Coupling Constant	x17 Higher than LiTaO ₃ (In Case of x=0)
EO effect:	Pockels effect \propto (electric field)
	Kerr effect \propto (electric field) ²
Refractive Index:	2.14 - 2.33

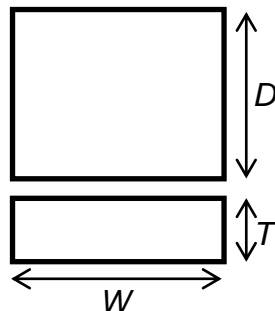
Phase Diagram



Standard Element

Size:

W x D x T (mm)
4.0 x 3.2 x 1.2
5.0 x 5.0 x 1.0
10.0 x 10.0 x 0.5



Composition:

Phase transition temperature
between Cubic and Tetra.

$T_c = 10-50^\circ\text{C}$

(composition derived from T_c : $x = 0.61-0.69$)

Contact for Custom Request

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