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*Manufactured in France, Sold all over the World.*



# KTP.fr

Potassium Titanyle Phosphate –  $\text{KTiOPO}_4$

## Applications

### Operation

**Second Harmonic Generation**

### Advantages

- + **Grey-Track resistant**
- + Large non-linear coefficient (~3pm/V)
- + Low bulk absorption (<100ppm/cm at 1064nm)
- + Small walk-off

### Field of Application

- + Mid-power CW lasers
- + High repetition rate, high average power lasers for material processing or surgery (average power up to 50W at 532nm)

## Optical properties

Average refractive index

1.8

Coefficients in Sellmeier's equation

$$\left[ n_i^2 = A_i + \frac{B_i}{\lambda^2 - C_i} - D_i \lambda^2 \right]$$

Index	A	B	C	D
$n_x$	3.006700	0.039500	0.042510	0.012470
$n_y$	3.031900	0.041520	0.045860	0.013370
$n_z$	3.313400	0.056940	0.059410	0.016713

for  $0.5 < \lambda < 3.5 \mu\text{m}$

C. Bonnin, Cristal Laser

Temperature coefficients of refractive indices,  $^\circ\text{C}^{-1}$

$$\left[ T=25^\circ\text{C and } \beta = \frac{1}{n} \frac{\Delta n}{\Delta T} \right]$$

$\beta_{nx}$	$3.12 \times 10^{-6}$
$\beta_{ny}$	$3.6 \times 10^{-6}$
$\beta_{nz}$	$6.24 \times 10^{-6}$

Transparency range,  $\mu\text{m}$

0.35 → 4.5

Residual absorption (PCI) at 1064nm:

<100 ppm/cm

Residual absorption (PCI) at 532nm:

<1%/cm

## Physical properties

Chemical formula

$\text{KTiOPO}_4$

Crystal structure

Orthorhombic

Point group

mm2

Lattice parameters, Å

a	12.82
b	6.40
c	10.59

Hardness (Mohs)

Near 5

Hygroscopic susceptibility

none

Density,  $\text{g.cm}^{-3}$

3.03

Resistivity (20°C, 20% Humidity), Ohm.cm

$10^9$

Aperture,  $\text{mm}^2$ :

from 1x1 to 10x10

Length, mm:

up to 15