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

KTP

Potassium Titanyle Phosphate – $KTiOPO_4$

Applications

Operation	Advantages	Field of Application
Second Harmonic Generation	+ Large non-linear coefficient (~3pm/V) + Low bulk absorption (<150ppm/cm at 1064nm) + Small walk-off	+ Low-power CW lasers + Surgical lasers (ophtalmology, dermatology) + Ti: Sapphire laser pumping
Optical Parametric Oscillator	+ Monolithic design available: OPO mirrors directly on the crystal + High efficiency + NCPM for eye-safe signal (1.57µm) + Walk-Off Compensating design (WOC) available at 2.1µm	+ Eye-safe designators and range-finders + ZGP OPO pumping

Optical properties

Average refractive index		1.8
Transparency range, µm		0.35 → 4.5
Residual absorption (PCI) at 1064nm:		<150 ppm/cm
Residual absorption (PCI) at 532nm:		<1.5%/cm

Coefficients in Sellmeier's equation

$$\left[n_i^2 = A_i + \frac{Bi}{(\lambda^2 - C_i)} - Di\lambda^2 \right]$$

for $0.5 < \lambda < 3{,}5$ µm

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

C. Bonnin, Cristal Laser

Temperature coefficients of refractive indices, $°C^{-1}$

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

β nx	3.12×10^{-6}
β ny	3.6×10^{-6}
β nz	6.24×10^{-6}

Physical properties

Chemical formula		$KTiOPO_4$
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, $g.cm^{-3}$		3.03
Specific heat, $cal.g^{-1}.°C^{-1}$		0.1737
Resistivity (20°C, 20% Humidity), Ohm.cm		10^6
Aperture, mm^2:		from 1x1 to 30x30
Length, mm:		up to 40