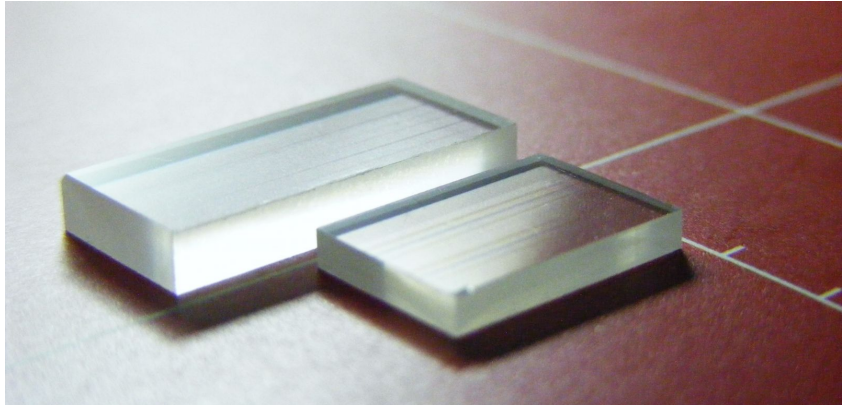


# Stoichiometric Lithium Tantalate (SLT)

## Product Description

Stoichiometric Lithium Tantalate (SLT) is superior to congruently grown Lithium Tantalate (CLT) as it is closer to ideal ratio of Lithium to Tantalum (50:50). This improved ratio provides the crystal with much lower defect density, thereby reducing the chances for optical damage and improving UV transmittance, at the same time having larger non-linear and electro-optic coefficients. When used in quasi-phase matched applications, SLT requires significantly less voltage during the periodical poling process, thus allowing the manufacture of thicker chips.

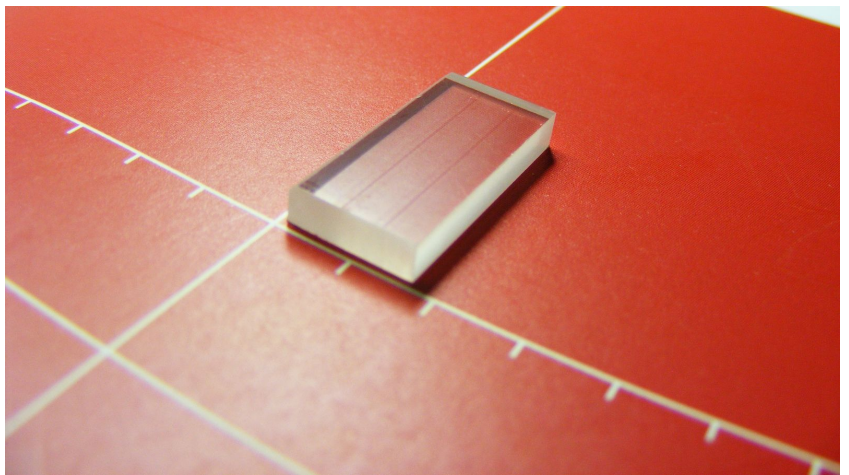


## Applications

- Mainly for QPM devices where photorefractive damage resistance in the visible and UV spectrum is required

## Features

- Low Coercive Field
- Higher Optical Damage Threshold
- Available Undoped and MgO doped



Parameters	Nominal Specifications
Composition	Stoichiometric $\text{LiTaO}_3$ (Li/Ta ~ 49.96:50.04)
Curie Temperature	690 °C
Space Group	R3c
Lattice Parameters (nm)	a = 0.51509 c = 1.3773
Transparent Wavelength Range (nm)	270 - 5500
Refractive Indices (at 633 nm)	$n_e = 2.177$ $n_o = 2.1745$
Birefringence ( $n_o - n_e$ )	-0.0025
Linear EO Constants (pm/V)	$r_{31} = 8.1$ $r_{33} = 33.5$
Nonlinear Optical Constants(pm/V)	$d_{13} = 2.5$ $d_{33} = 16$
E-field for Domain Switch (Coercive Field) (kV/mm)	< 1.0
Optical Damage Threshold (kW/cm <sup>2</sup> )	> 1000 (undoped)