

DESCRIPTION

Lithium iodide is white crystalline solid salt but when exposed in air it becomes yellow in color as oxidation of iodine to iodine takes place. Lithium iodide is extensively used as an electrolyte for high temperature batteries. It is also used for providing longer life to the batteries. Furthermore, lithium iodide is soluble in propanol, ethanol, ethanediol and ammonia.

Alkali halide scintillators are among the popular materials for scintillation applications and are widely used in the areas such as high energy physics, nuclear physics, medicine, geology, astrophysics and security. LiI crystals have attracted attention owing to the presence of ^6Li nuclei that have a large capture cross-section for thermal neutrons. LiI crystals have been grown with different activators and tested for scintillation properties.

APPLICATIONS

- Scintillation
- Thermal neutrons detector
- High count rate applications

FEATURES

- The presence of ^6Li nuclei
- Have a large capture cross-section for thermal neutrons

PARAMETERS

Material and Specifications

Orientation	<100>, <110>, <111>
Orientation Tolerance	< 0.5°
Parallelism	5"
Perpendicularity	3'
Surface Quality	10-5 (Scratch/Dig)
Wavefront Distortion	<λ/4@632 nm
Surface Flatness	<λ/8 @632 nm
Clear Aperture	>90%
Chamfer	<0.1×45°
Thickness/Diameter Tolerance	±0.05 mm

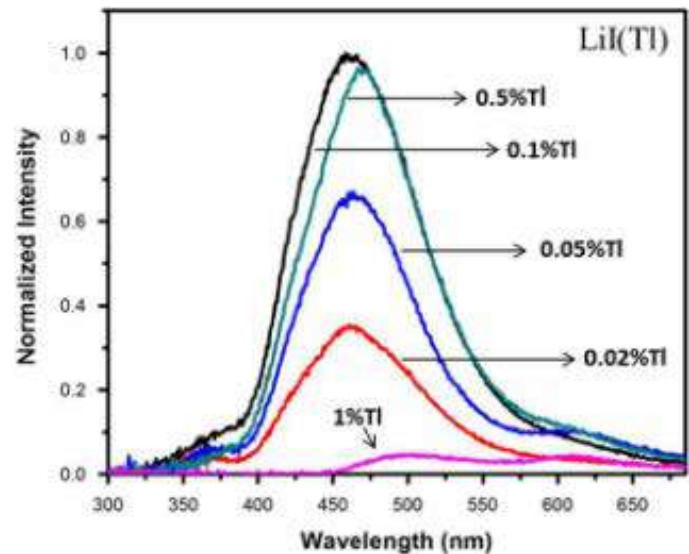
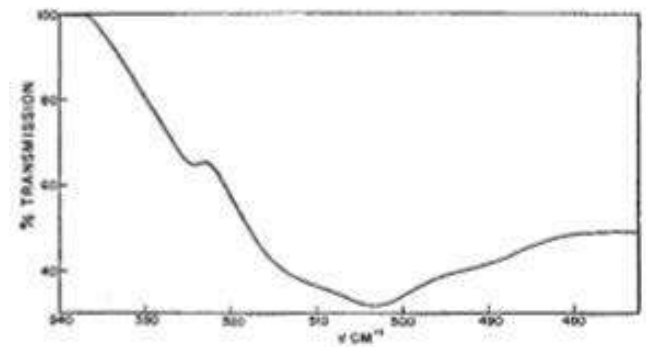
Physical and Chemical Properties

Crystal Structure	Cubic
Symmetry Class	Fm3m
Lattice Constants	5.93
Specific Mass	4.076 g/cm ³
Melting Point	449°C
Cleavability	<100>
Thermal Conductivity (W·m ⁻¹ ·K ⁻¹ @300K)	0.702
Specific Heat (J·kg ⁻¹ ·K ⁻¹)	258.12
Thermal Expansion (10 ⁻⁶ ·K ⁻¹)	40
Hardness (Mohs)	2
Vickers Microhardness(GPa)	0.1
Elastic Constant(kbar)@295K	C11=290.7, C12=-142.1, C44=140.7
Bulk Modulus (GPa)	17.17
Refractive Index	1.955

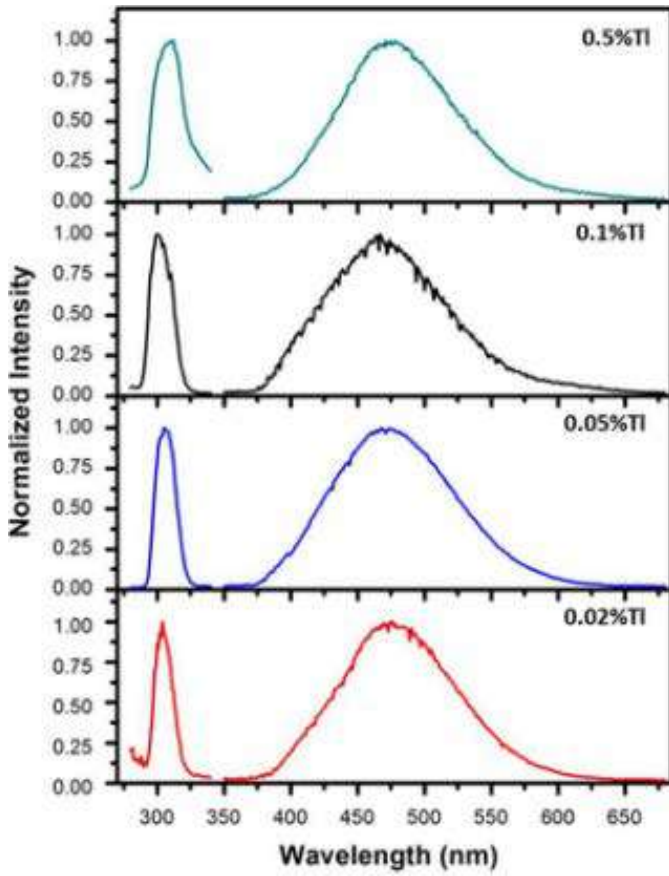
Optical Characteristics

	6LiI(Eu)	6LiI(Tl)
Maximun emission(nm)	470	460
Energy Resolution at ΔE/E(FWHM)%		13@0.1mole%
Light Yield(ph/MeV)	15000	14000@0.5mole%
Primary Decay Time(μs)	1.2	0.177(81%)@0.1mole%

Spectrum



Spectrum



Index of Refraction

