

# Nal(Tl) Scintillator



Thallium doped sodium iodide, NaI(Tl), is the most widely used scintillation material, it has the greatest light output and convenient emission range coincident with photo multiplier tube(PMT), currently NaI(Tl) has wide application in radiation detection, level and density measurement as well as geological exploration.

## Basic Information

- Growth technique: Bridgman
- Dimension(max):  $\varnothing$  150 mm x 400 mm
- Achieved items: blank, encapsulated and assembly detectors

## General Properties

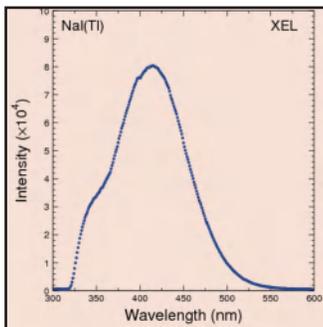
Density(g/cm <sup>3</sup> )	3.67
Melting point(K)	924
Wavelength of emission peak(nm)	415
Light output(Photons/MeV)	40,000
Decay time(ns)	264
Cleavage plane	(100)
Hygroscopic	Yes
Refractive index	1.85
Hardness(Mho)	2

## Characterization

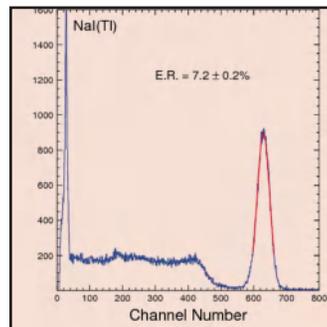
Dimension of NaI(Tl):  $\varnothing$  40 x 40 mm

PMT: R1306; Reflector: Teflon(0.80 mm ); Radiation source: Cesium<sup>137</sup>; HV: 650V

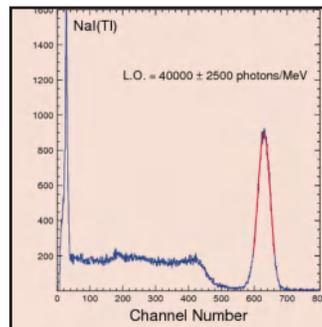
Absolute value of light output: 40,000; Energy resolution: 7.2%; Decay time: 264 ns



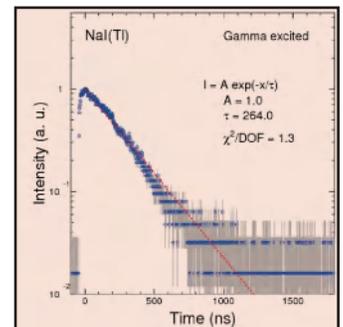
X-Ray excited Luminescence curve



Energy resolution curve



Light output curve



Scintillation decay curve by gamma ray excited

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