

MarkeTech Yttrium aluminum perovskite:Ce:ium (YAP:Ce; YAlO₃) Scintillator Crystal

Category : Ceramic , Oxide

Material Notes:

Yttrium aluminum perovskite activated by cerium is a fast, mechanically strong and chemically resistant scintillation material. Mechanical properties enable precise machining and entrance windows can be made with a very thin aluminum layer deposited directly on the entrance surface of the crystal. YAP:Ce scintillators have very low energy secondary X-ray emissions which makes them desirable for imaging applications. YAP:Ce detectors are used for gamma and X-ray counting, electron microscopy, electron and X-ray imaging screens, and tomography systems. Data provided by the supplier, MarkeTech International.

Order this product through the following link:

http://www.lookpolymers.com/polymer_MarkeTech-Yttrium-aluminum-perovskiteCerium-YAPCe-YAlO3-Scintillator-Crystal.php

Physical Properties	Metric	English	Comments
Density	5.37 g/cc	0.194 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Mohs	8.6	8.6	

Thermal Properties	Metric	English	Comments
CTE, linear	4.00 - 11.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	2.22 - 6.11 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
Melting Point	1875 $\text{Å}^\circ\text{C}$	3407 $\text{Å}^\circ\text{F}$	

Descriptive Properties	Value	Comments
Crystal Structure	Rhombohedral	
Hydroscopic?	No	
Luminescence: Afterglow	<0.005%	at 6 ms
Luminescence: Decay Constant	25 n/s	
Luminescence: Integrated Light Output	40	NaI:Tl = 100
Luminescence: Photon Yield	10	300K; 10 ^{>3</sup> pH/MeV}
Luminescence: Radiation Length	2.7 cm	
Luminescence: Wavelength of max emissions	370 nm	

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