

TeO₂



DESCRIPTION

TeO₂ crystal, also known as tellurium dioxide, is a kind of acousto-optic crystal material with high-quality factors and excellent performance, TeO₂ crystal has the advantages of fast response, low driving power, and high diffraction efficiency, stable and reliable performance. It is widely used in various types of acousto-optic devices such as acousto-optic deflectors, acousto-optic modulators, acousto-optic harmonizers, acousto-optic filters, and tunable filters. Therefore, TeO₂ crystals are a promising material for acousto-optic devices, especially for acousto-optic modulators and acousto-optic harmonizers, and have a wide range of applications in optical computing, optical communication, and optical microscopic imaging.

FEATURES

- High refractive index
- Low sound attenuation
- High Quality Factor
- High transparency to visible light
- Excellent sound and light characteristics

APPLICATIONS

- Acousto-optical deflector
- Sound and light modulator
- Acousto-optic adjustable filter
- Acoustooptic coordination filter
- 355nm, 532nm, 2000nm, 2100nm lasers

APPLICATIONS

attribute	numerical value
chemical formula	TeO ₂
Molar mass	159.60 g/mol
colour	colourless
density	5.99 ± 0.03 /cm ³
melting point	733°C
Mohs hardness	3 ~ 4
thermal expansion	10 ⁻⁶ K ⁻¹ : a ₁₁ = 17.7; a ₂₂ = 17.7; a ₃₃ = 5.5
Symmetry	Tetragonal crystal system, 422 (D4)
Cell parameters	a = 4.8122 Å; c = 7.6157 Å
Transmittance	>70% @ 633nm



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Launch range	0.33 ~ 5.0 μm
Dielectric constant	$\epsilon_{11} = 22.9; \epsilon_{33} = 24.7$
Elastic constant · 10 ⁻¹⁰ N/m ²	$c_{11} = 5.57; c_{33} = 10.58; c_{44} = 2.65;$ $c_{66} = 6.59; c_{12} = 5.12; c_{13} = 2.18$
Photoelastic coefficient @0.6328 μm	$p_{11} = 0.0074; p_{12} = 0.187; p_{13} = 0.340;$ $p_{31} = 0.0905; p_{33} = 0.240; p_{44} = -0.17; p_{66} = -0.0463$

SPECTROGRAM

