

Crystaltechno Ltd. offers grown in house

Synthetic Calcite Crystals (CaCO₃)

Calcite (Iceland spar) is a rhombohedral crystalline form of calcium carbonate (CaCO₃). It is a negative uniaxial crystal that has high birefringence and wide spectral transmission.

Physical and optical properties of synthetic calcite crystal	
Chemical formula	CaCO ₃
Crystal class	Trigonal
Symmetry class	R3c
Lattice constant, Å	a=4,994, c=17,081, v= 368,8
Molecular weight	100,09
Melting point at 10,3 MPa, K	1612
Density at 289 K, g/cm ³	2,711
Mohs' hardness	3
Reflection loss (one surface, o-ray), % at 0,22 μm at 0,7 μm	4,2 3,4
Thermal expansion at 323 K, 1/K parallel to optical axis perpendicular to optical axis	25,1 x 10 ⁻⁶ 4,9 x 10 ⁻⁶
Transmission range, μm	0,2 - 2,5
Elastic constant, x 10 Din/cm	c11 13,17 c12 4,82 c22 8,11 c13 5,68
Solubility into water at 289 K, g/l	0,0014
Decomposition temperature, K	1167
Cleavage (excellent)	(1011)

Hydrothermally grown calcite has excellent birefringence and transpance in wide range of spectrum. It is an ideal material used in the optical industry to manufacture visible and near IR polarizers, UV polarizers, such as Glan Taylor, Glan Thompson and Glan Laser with extremely high extinction ratio, beam divergent elements, laser gates and other optical devices. Synthetic calcite is identical to the best sorts of natural crystals and is characterized by a greater light transmission in UV range of spectrum, stable optical properties and absence of solid inclusions and twins.



Natural calcite crystal



Synthetic calcite crystals

Our products

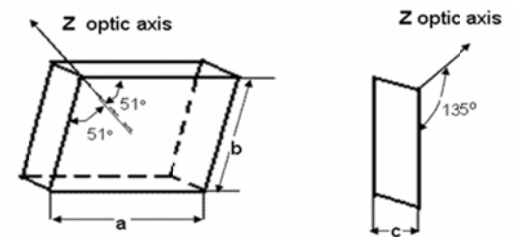


Fig.1 Cleavable rhombohedron.
 Dimensions: 40 +80 (a) x 40+80 (b) x 12 +16 (c) mm.

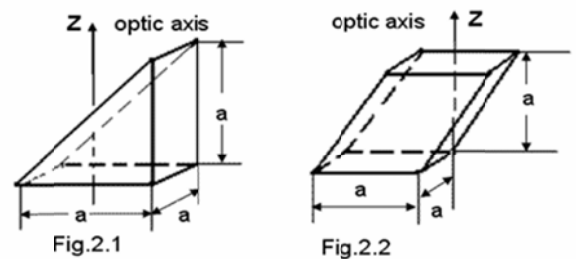


Fig. 2 Wedge –shaped blank for polarizing prisms.
 Dimensions: a = 10 +20 mm

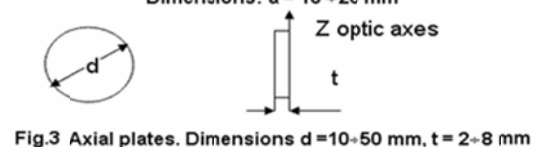


Fig.3 Axial plates. Dimensions d =10-50 mm, t = 2-8 mm



Fig.4 Pinacoidal plates . Dimensions: d =10-50 mm, t = 2-8 mm

If you are interested please feel free to contact us! You can receive the additional information

e-mail: sales@crystaltechno.com