

Research Crystals



MAXIMUM STABILITY IN DEMANDING APPLICATIONS

The standard AT-cut, 1-inch diameter crystal, pioneered by INFICON, is used primarily in research applications. These research crystals are designed to fit in rugged, easy to operate INFICON crystal holders and are used for in-situ monitoring of deposited films or liquids.

APPLICATIONS

- Metal plating
- Gas-phase mass detection
- Electro-chemistry
- Micro-rheology
- Protein adsorption/desorption
- Biofilm formation

Geometry - The AT-cut quartz has superior mechanical and piezoelectric properties. The 1-inch diameter allows enough distance between the active area of the crystal and the mounting o-ring. This improves the overall stability of the crystal by reducing the frequency changes due to mounting stress.

Finish - INFICON liquid sensor crystals are available with either a low cost unpolished finish or a polished finish. Polished crystals allow for a good correlation between theory and measurement during liquid immersion experiments.

FEATURES AT A GLANCE

- Accurate
- Reliable
- Stable
- Wide variety of materials available

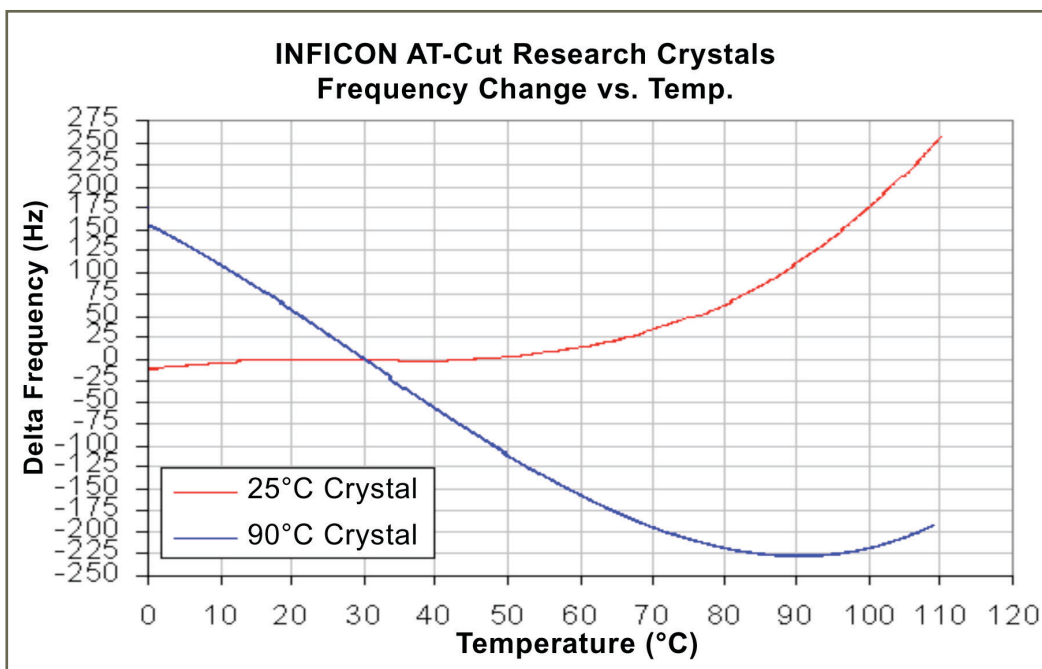
Electrode Material - INFICON crystals are available in a variety of electrode materials including Gold, Platinum, Titanium, etc. INFICON also offers Gold electrode crystals with an additional SiO_2 outer layer to create a hydrophilic surface needed for some biological applications.

Temperature - Even though AT-cut crystals are designed to minimize the change in frequency due to temperature, the effect of temperature can be significant when attempting to resolve small mass (frequency) changes over long periods of time. INFICON offers AT crystals optimized for two operating temperatures, namely 90°C and 25°C. These crystals have very good temperature stability when operating close to their specified temperature.

Contact INFICON today and request a quote for custom crystals, including electrode materials, frequencies and electrode geometries, to accommodate your special requirements.

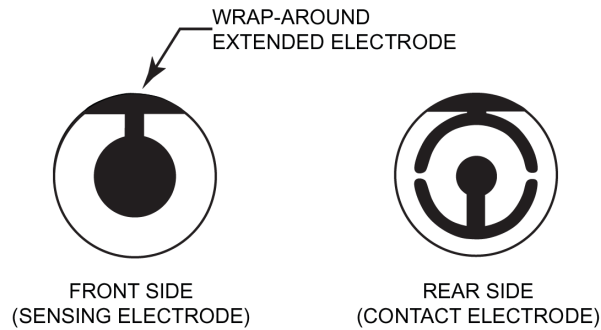
SPECIFICATIONS

Frequencies:	5 MHz & 9 MHz
Frequency Range:	4.976 - 5.020 MHz 8.976 - 9.036 MHz
Resistance:	5 MHz, ~10 Ohms 9 MHz, ~7 Ohms
Crystal Diameter:	1" (25.4 mm)
Crystal Contour:	Plano-Plano
Crystal Orientation:	AT-Cut, for frequency stability over temperature
Compatibility:	INFICON/Maxtek liquid probes & crystal holders
Front Electrode Diameter:	½" (12.7 mm)
Packaging:	Individually packaged/sold
Crystal Thickness:	5 MHz, 0.013" (333 microns) 9 MHz, 0.007" (185 microns)
Surface Roughness:	50 Å, polished crystals



ORDERING INFORMATION

INFICON 1-Inch Diameter Crystals – Electrode Configuration



1" Crystals, AT-Cut, 90°C				
Part No./Finish		Description	Electrode Material (Front)	
Polished	Unpolished		Adhesion Layer	Sensing Electrode
149211-1	149211-2	5 MHz	Chrome	Gold
149238-1	149238-2	5 MHz	Titanium	Gold
149240-1	149240-2	5 MHz	Titanium	Platinum
149241-1	149241-2	5 MHz	Chrome	Platinum
149242-1	-	5 MHz	Titanium	Silver
149243-1	-	5 MHz	Titanium	Aluminum
149248-1	-	5 MHz	Titanium	
149250-1	-	5 MHz	Chrome	Nickel
149252-1	-	5 MHz	Chrome	Iron
149255-1	-	9 MHz	Chrome	Gold
149270-1	-	5 MHz	Titanium	Quartz (SiO ₂)
149280-1	-	5 MHz	Chrome	
149296-1	-	9 MHz	Titanium	Gold
750-1030-G1	-	5 MHz	Aluminum	
750-1031-G1	-	5 MHz	Uncoated	
750-1035-G1	-	5 MHz	Uncoated	
1" Crystals, AT-Cut, 25°C				
Part No./Finish		Description	Electrode Material (Front)	
Polished	Unpolished		Adhesion Layer	Sensing Electrode
149257-1	-	5 MHz	Titanium	Gold
149272-1	-	9 MHz	Chrome	Gold
149273-1	-	5 MHz	Chrome	Gold
149274-1	-	5 MHz	Titanium	Platinum
149275-1	-	5 MHz	Titanium	Silver
149276-1	-	5 MHz	Titanium	Aluminum
149277-1	149277-2	5 MHz	Titanium	Quartz (SiO ₂)
750-1029-G1	750-1033-G1	5 MHz	Titanium	
750-1037-G1	-	9 MHz	Titanium	Platinum
750-1039-G1	-	9 MHz	Titanium	Quartz (SiO ₂)
750-1193-P1	-	5 MHz	Gold, Titanium	Iron



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