

CRYSTAL SELECTION GUIDE

When choosing a crystal, it is important to consider chemical compatibility, the required spectral range, and the refractive index of your crystal (n_c) and sample (n_s).

Refractive Index – the crystal should have a higher index of refraction than the sample

Spectral Range – all ATR crystals have different spectral ranges.

Chemical and Physical Properties – for obvious reasons, the ATR crystal must be chemically and physically compatible with the sample.

Sensitivity – effective pathlength of the infrared beam in the sample must be sufficient to produce an adequate spectrum.

Optical Design – the overall optical design of an HATR accessory – its optical path, mirrors quality and throughput has great effects on analytical results.

	Refractive Index	Long Wave Length	Penetration. Depth	Water. Solubility	PH Range	Hardness
AMTIR	2.5	625	1.70	Insoluble	1-9	170
Diamond/ZnSe	2.4	525	2.00	Insoluble	1-14	5,700
Germanium	4	780	0.66	Insoluble	1-14	550
KRS-5	2.37	250	2.13	0.05	5-8	40
Silicon	3.4	1500	0.85	Insoluble	1-12	1150
ZnS	2.2	850	3.86	Insoluble	5-9	240
ZnSe	2.4	525	2.00	Insoluble	5-9	120

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