

Matrix Isolation

Matrix isolation is a spectroscopic study to maintain materials (guest particles) in an inert medium (host matrix) at very low temperatures. It was developed because it's difficult to obtain gas-phase infrared spectra due to its high chemical reactivity of transient molecules. The mixture of guest particles and the host matrix is deposited on a transparent window, which will be cooled below the melting point. Experiments must be performed under a high vacuum to prevent contaminants from unwanted gases freezing to the cold window. Lower temperatures are preferred, due to the improved rigidity and "glassiness" of the matrix material. Noble gases are normally used to dilute guest samples, such as argon, not just because of their unreactivity but also because of their broad optical transparency in the solid-state.

Customer References:

Colin Parker, School of Physics, Georgia Institute of Technology, USA: [Phys. Rev. A 99, 022505 \(2019\)](#).

Related Products:



X-1SS HIGH PERFORMANCE

- Best for electrical, magnetic, and optical experiments

Cryostat Model	Type
DMX-1SS	CCR
FMX-1SS	CCR
GMX-1SS	CCR
LT3-WMX-1SS	Flow



LT4

- All-purpose, low cost flow cryostat
- Maintains the high cooling power of the LT3
- UHV option available

Cryostat Model	Type
LT4	Flow