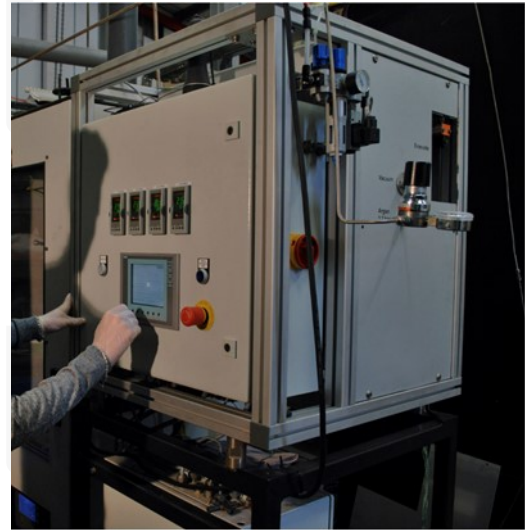


Technical Specification of CVD Machines— Ionbond™ 4513172

Metal-organic CVD evaporator

The Ionbond™ MOCVD evaporator is designed for the sublimation and transportation of wide range of metal-organic precursors into an external deposition chamber.



Overview

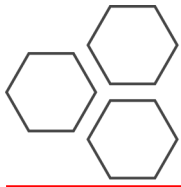
The MOCVD evaporator is an add-on, self-contained system designed for the sublimation and transport of metal-organic powder precursors for refractory, precious and other metals. Powder feed quantities and vapour transfer volumes follow high-precision process regulation and control.

A touch panel interface provides the user with ease of process programming, control and monitoring.

The system can be run manually or set with a number of pre-programmed automated sequences to control powder feed, temperature, carrier gas flows, pressure and timed valve operation.

Evaporation temperatures range from 80 - 330°C and the evaporation chamber has two-zone heating with PID control to ensure temperature stability and uniformity.

The system can be integrated with any potential deposition through a ¼" gas outlet feed. The evaporator outlet line features a Büerkert pressure control valve to enable integration with both atmospheric and low-pressure deposition processes. The valve and outlet line are heated and regulated by the PID control to prevent recondensation of generated precursor vapour.



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Specification

Criteria	Specification
Evaporator Dimensions	700 x 700 x 800 mm (not inc. base/support structure)
Weight	160 kg
Refractory metal precursors	Base: Ir, Re, W, Mb, Ta, Mo
Precious metal precursors	Base: Pt, Au, Ag, Cu
Other metal precursors	Base: Ni, Cr, Al, Y
Control interface	Siemens SIMATIC HMI
Precursor feed control	Coperion K-tron K-MT12/16
Carrier gas	Ar, He, N ₂
Carrier gas flow	0.2 – 5 l/min
Gas Control	Controlled by mass flow controller
Temperature Range	80 - 330°C
Temperature Control	4 zones with PID control
Evaporation Pressure Range	10 – 1050 mbar
Pressure Measurement	WIKA S-10 pressure transducer
Pressure Control	Büerkert 1067
Power requirement	10 kVA
Pressurised air	5 bar ± 0.2 bar (oil free)