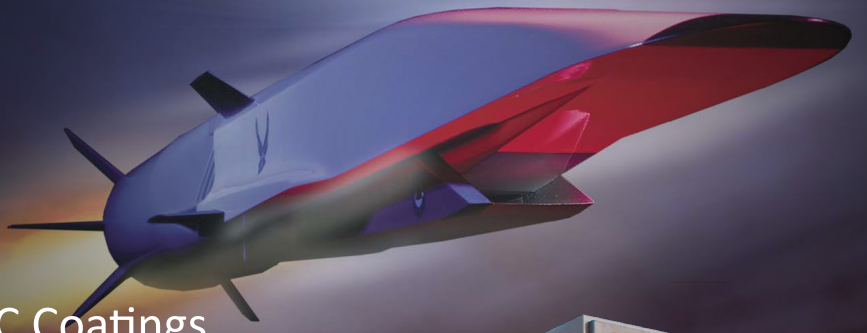


CVI 200™

R&D & Pilot Scale System for
Infiltration of Preforms and UHTC Coatings



Work Zone up to
11" ID and 10" H



Thermal Processing
Up to 1600 °C



3 Zone Resistance
Furnace



Low Pressure Control
5 to 500 Torr



Internal Chlorinators



CVI 200™
Chemical Vapor Infiltration System

Development and qualification of advanced ceramic matrix composites (CMCs) for
Aerospace & Defense

CVI 200™

CVD Equipment Corporation's CVI 200™ allows for the infiltration of CMC preforms as well as the deposition of ultra-high temperature ceramic (UHTC) coatings. UHTC coatings are a category of materials exhibiting some of the highest temperature melting points. The materials are designed to operate in extreme environments where conventional monolithic ceramics and metals would fail due to extreme heat and oxidation conditions, and have many applications including aerospace and defense, and hypersonics.

The CVI 200™ can be configured to enable the deposition of UHTC coatings onto C/C and SiC/SiC CMCs with a variety of precursors materials, including silicon carbide (SiC), silicon nitride (Si₃N₄), boron nitride (BN), silicon boron nitride (SiBN), boron carbide (B₄C), pyrolytic carbon (C), hafnium carbide (HfC), hafnium diboride (HfB₂), zirconium carbide (ZrC), and zirconium diboride (ZrB₂).

Offering precise temperature uniformity control, process pressure, gas flows, and substrate rotation, the CVI 200™ infiltrates and deposits coatings with uniform thickness over complex 3D shapes.

Features and Options

- Three zone resistance furnace with independent zone temperature control
- Graphite retort & heating elements
- Stainless steel double wall, water cooled vacuum chamber
- Up to three internal chlorinators
- Temperature uniformity better than +/- 5 °C
- Workpiece rotation 1- 20 rpm
- Gas preheat & mixing zone
- Internal pyrolyzer
- Heated exhaust line
- Cold trap for ammonium chloride byproducts
- Exhaust gas conditioning system with closed loop pH control and recirculation
- Hazardous gas leak detection and alert systems

Technical Data

Work Zone	11" ID & 10" H
Power Supply	up to 85 kW
Operating Temperature	up to 1600 °C
Operating Pressure	5 to 500 Torr

State-of-the-Art Chemical Vapor Infiltration System



Liquid Abatement Neutralization Systems



- Wet Scrubber for Corrosive Gas Abatement
- Closed loop pH control system
- Recirculation system
- Overflow tank system

CVD
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Corporation

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