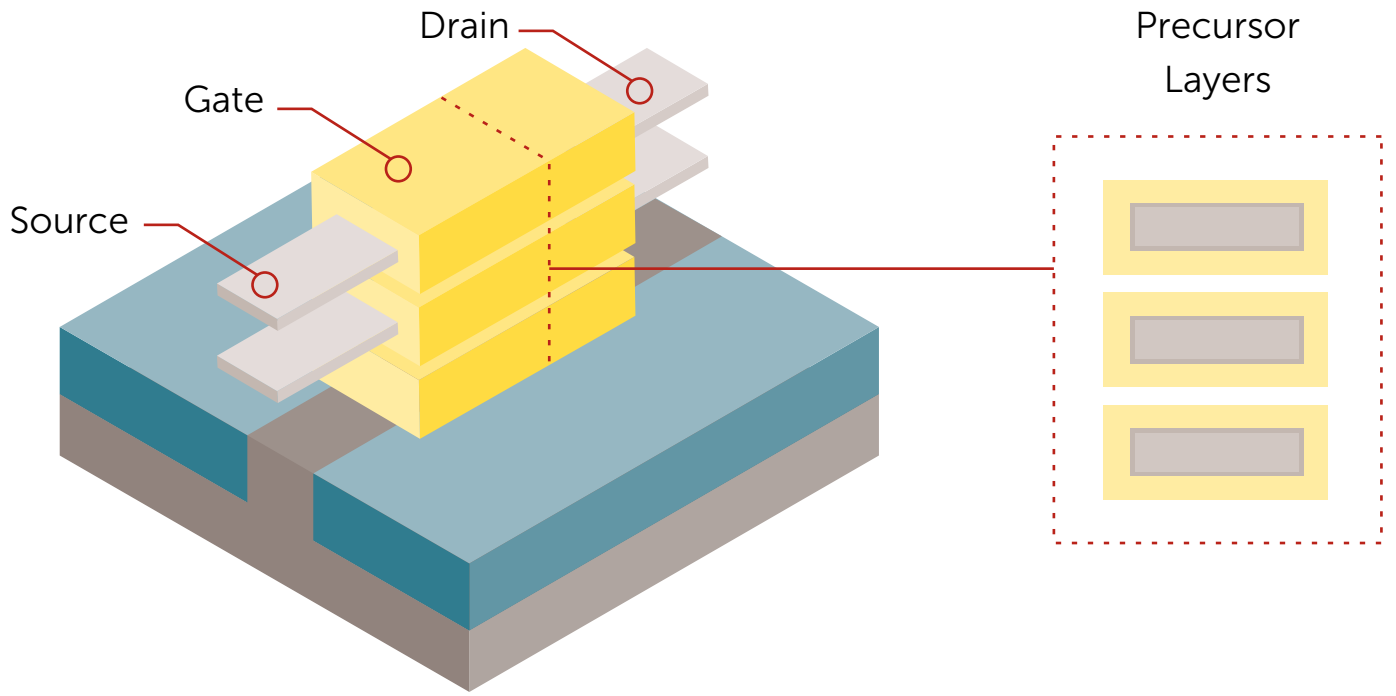


Working with Solid Precursors in Deposition

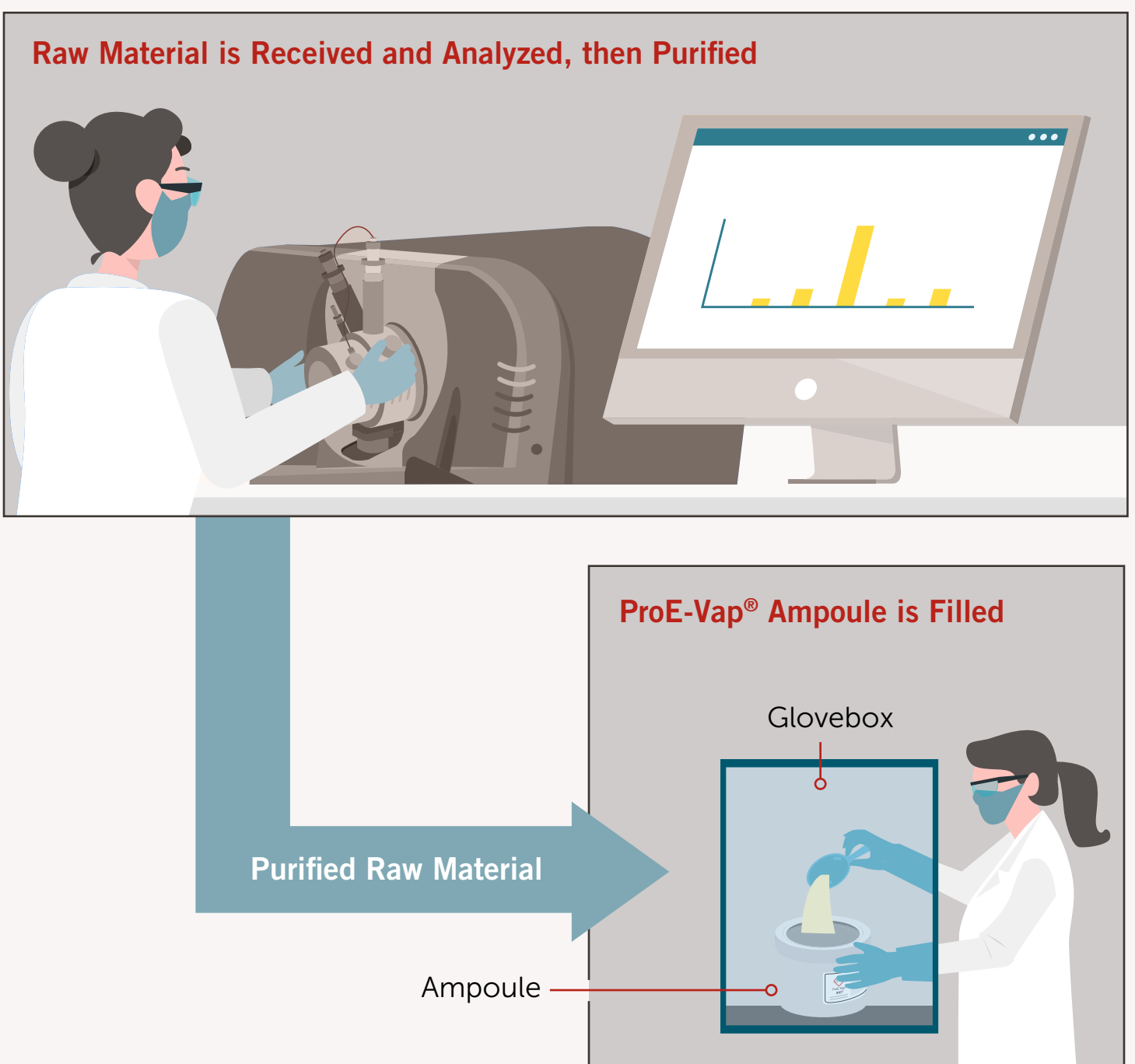
Device performance requirements are driving the need for new materials and new integration schemes for logic and memory. Many of the materials that enhance device performance can only be deposited using solid precursors, including materials for high- κ gate, memory wordline applications, and low resistance metals.



Delivering solids at a high flow rate requires new delivery technology to maximize flux while minimizing contamination. Here's how Entegris solves these challenges.

AUTOMATING MATERIAL ANALYSIS, PURIFICATION, AND FILLING PROCESSES

Entegris uses newly developed processes that lean on Programmable Logic Controllers (PLCs) to produce chemically pure precursors without defect-causing contaminants.



ENSURING CONSISTENCY IN PRECURSOR DELIVERY

Entegris offers two systems that help manage mass production with solid precursors.

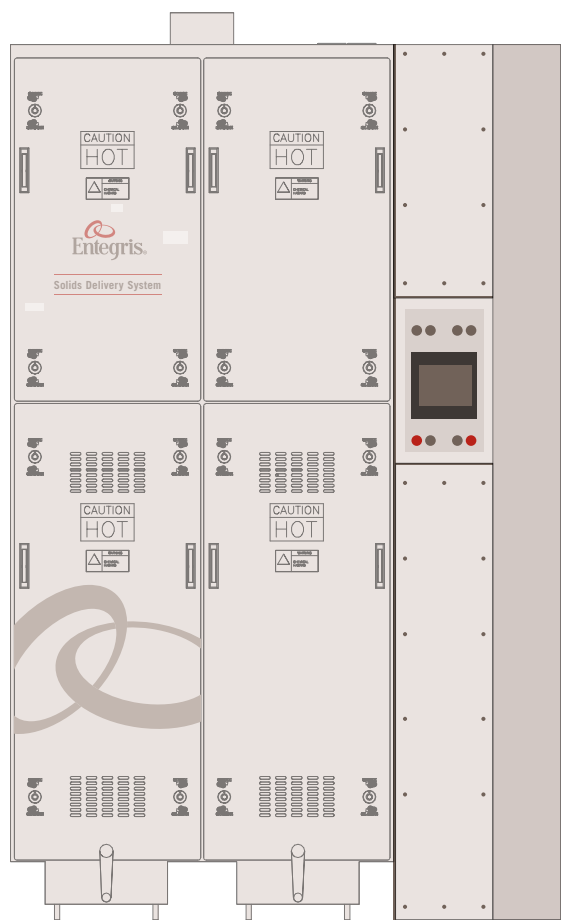
ProE-Vap Delivery System



ProE-Vap delivery system provides higher mass flux at lower temperatures than conventional vaporizers, which results in lower total cost of ownership.

- Supports pneumatic and manual valve options
- Outstanding overall performance with consistent flow over the vaporizer lifetime
- Increased utilization of solid precursor in comparison to standard delivery ampoules

Solid Source Delivery Cabinet



Solid Source delivery cabinet allows longer tool utilization while reducing downtime for container changes.

- Can be configured for carrier gas or vapor delivery modes
- Features fully automated purge, heat up, container change, and container switchover sequences
- Minimizes pressure drop through the process manifold and with multiple uniform heating zones and monitoring, ensures optimal chemical delivery

www.entegris.com/solids