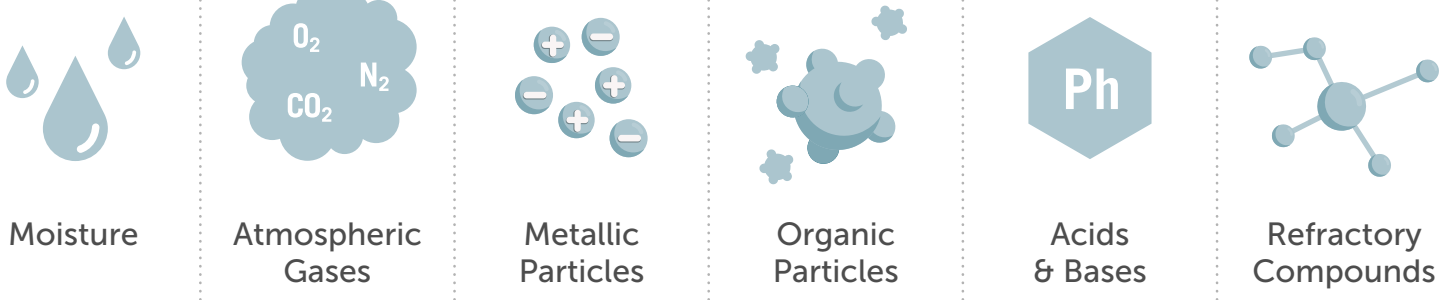


# Clean Gas Delivery

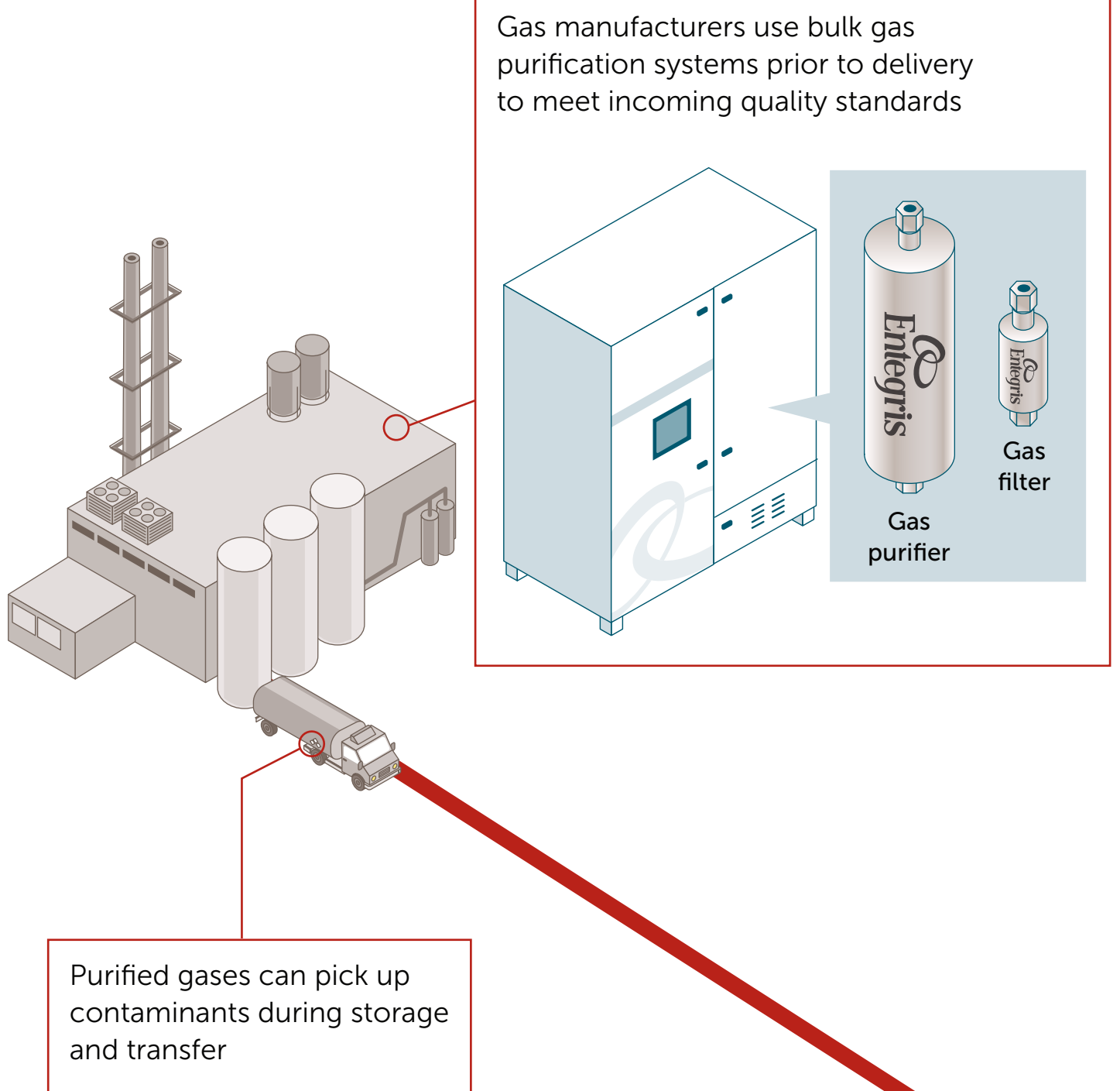
Semiconductors are becoming smaller and more complex through the use of novel materials and chemicals. Because of this, fabricators must pay closer attention to the purity of process gases and the ambient environment of the manufacturing floor. This demand for purity influences the gas supply chain, placing greater emphasis on processes and technologies that ensure clean gas delivery.

## PREVENTING CONTAMINATION

Even trace contaminants in the gas supply can measurably impact chip performance and wafer yield. Types of contaminants include:



## ENSURING GAS PURITY AT SUPPLIERS



## ENSURING GAS PURITY AT FABRICATORS

**Airborne Molecular Contamination (AMC)**  
 In a world of pervasive defectivity, fabs must be increasingly wary of environmental contamination from any source, even inadvertent off-gassing from workers in cleanroom suits.

- AMC filter media are custom developed based on sampling of tool and ambient environments to remove contaminants of concern
- Our Analytical Services lab accurately identifies AMC down to ppt concentrations to characterize the environment

**Gas Delivery to Tool**

- Additional point-of-use filters and purifiers are used within the tool and ambient environment to deliver the final purity
- Gas filters and purifiers use broad area media and membranes to remove the targeted contaminants that threaten each process

**Gas Storage, Sub Fab, and Safe Delivery Source® Cylinders**

- Gases received from suppliers are stored in bulk storage devices in the sub fab, and then purified again as they are migrated to gas distribution systems
- Highly toxic gases and specialty gas blends are stored and delivered in subatmospheric pressure, preventing unwanted discharge using inert, adsorbent carbon pucks within the cylinder

## REIMAGINE PURITY IN COLLABORATION WITH ENTEGRIS

Entegris is a trusted partner providing mission-critical solutions for ensuring gas purity throughout the semiconductor ecosystem, from the supply chain to cleanroom environments on the fabrication floor.

[www.entegris.com/clean-gas-delivery](http://www.entegris.com/clean-gas-delivery)