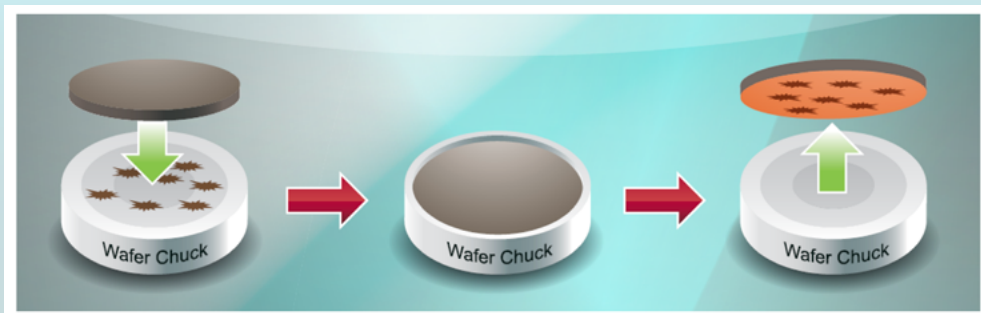


Eliminate PVD backside pressure faults without opening chamber

PVD chambers used for fabricating semiconductor devices have scheduled wet cleans to minimize contamination and the sputtering targets need to be periodically replaced. These procedures always result in extended tool downtime and device manufacturers try to maximize time between wet cleans and combine cleaning with target replacement. However, particles on the electrostatic chuck (ESC) may result in low backside pressure, causing backside pressure faults (BSPF). This forces early wet cleans, unplanned downtime, and shortened target life. Typical wet clean recovery time is twelve hours or more.

The **Chuck Cleaning Wafer (CCW)** product was developed to remove and trap the loose debris that accumulates on the wafer chuck. **CCW** is a highly cross-linked, very sticky polymeric material mounted on wafers that are cycled through the process tool. This unique cleaning material does not out-gas as measured per the ASTM E595 standard, nor is it observed to transfer any metallic or organic material as tested by ICP-MS and XPS analysis. The **CCW** product can be used at temperatures up to 300° C.

In a typical application, when a backside pressure fault occurs, the **CCW** is processed through the chamber and clamped on the electrostatic chuck. The compliant polymer removes defects from the top surface of the chuck which can cause a poor seal between the product wafer and the chuck. The process to transfer the wafer through the tool typically takes 5 minutes or less. The illustration below shows how this cleaning process works.



Low Cost of Ownership - The **Chuck Cleaning Wafer** product can typically be used up to 20 times before it becomes saturated with particles. **International Test Solutions** has developed a cleaning kit to recover the **CCW** product, extending the typical life to more than 100 chamber cycles. ITS does not recommend the use of any organic solvents - including alcohol - for cleaning the **CCW**. Use of alcohol or other organic solvents may shorten **CCW** product life. For more details on the recommended procedure for cleaning, please contact **International Test Solutions**.

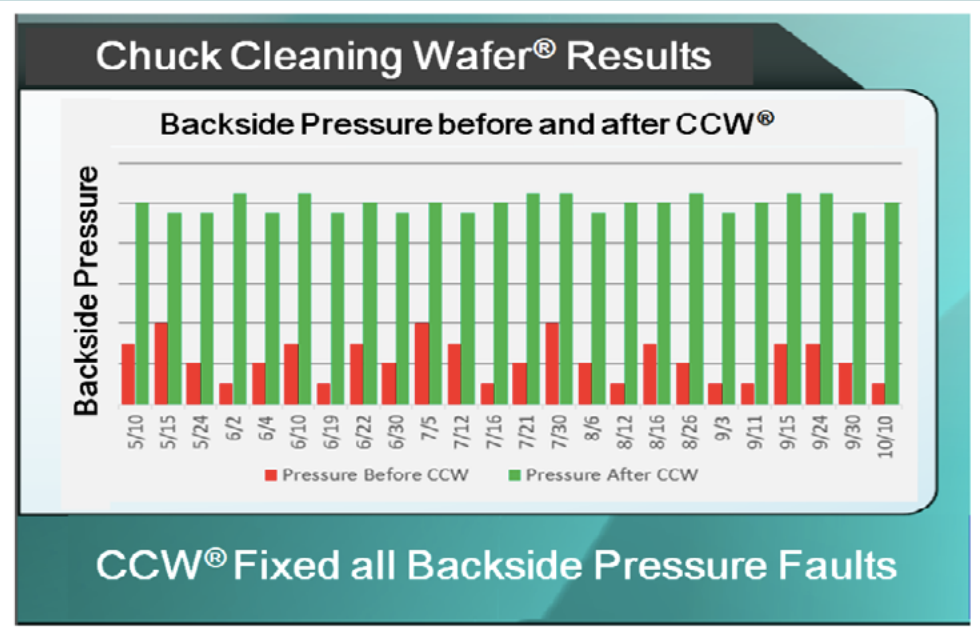
PVD CCW™ is trademark of International Test Solutions.

For more information, please contact:

International Test Solutions - 1595 Meadow Wood Lane - Reno, NV 89502 (USA)
www.inttest.net - mail: sales@inttest.net - Phone: +1 775-284-9220



Customer Data – A customer evaluated **CCW** over five months on multiple PVD chambers. **CCW** was cycled through the tool whenever the ESC backside pressure was below specification. In the graph below, the red bars show the backside pressure prior to **CCW** and the green bars are post **CCW**. The backside pressure faults were fixed without opening the chamber, and the tool was put back in production immediately.



The maximum benefit from **CCW** can be achieved when the wafer is cycled regularly as a preventative maintenance procedure. This can be scheduled after wet clean or during other routine test procedures. **CCW** is available on wafer substrates with 100mm, 125mm, 150mm, 200mm, and 300mm diameters.

Contact International Test Solutions (ITS) directly at +1 775-284-9220, or contact a local ITS distributor with your specific requirements to evaluate this product for your specific PVD applications.

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