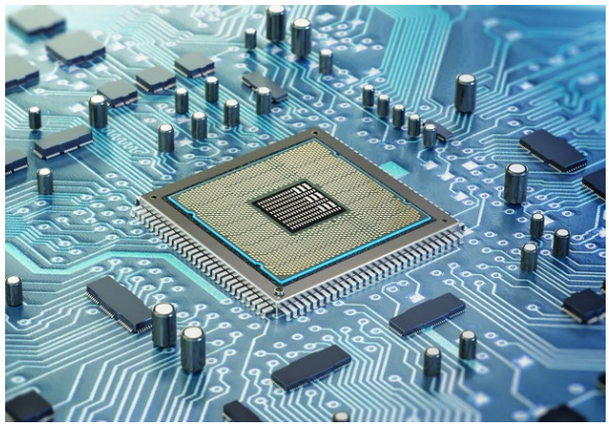
CMRMP Chemical and Material Risk Management Program

U.S. Department of War

Enhance military readiness and support the warfighter by effectively identifying and managing risks associated with the acquisition, use, and disposal of chemicals and materials across the Department of War.

Microelectronics and Semiconductors

Semiconductors – materials with controllable electrical conductivity – are the foundation of modern electronics. Using semiconductor materials to create integrated circuits and microchips, microelectronics makes possible the tiny, high-performance devices that drive modern technology. Every electronic device and product that incorporates electronics relies on semiconductor chips. This includes modern defense systems for radar and communication systems, electronic warfare and cybersecurity systems, and guidance and control systems for missiles and drones.



Chemicals Make It Possible

Chemicals play an essential role in the manufacturing of semiconductors. Numerous chemicals are needed at every step in the manufacturing process. For example, the Semiconductor Equipment and Materials International (SEMI) estimated that 500 different process chemicals are required to manufacture a single semiconductor chip.



About the Program

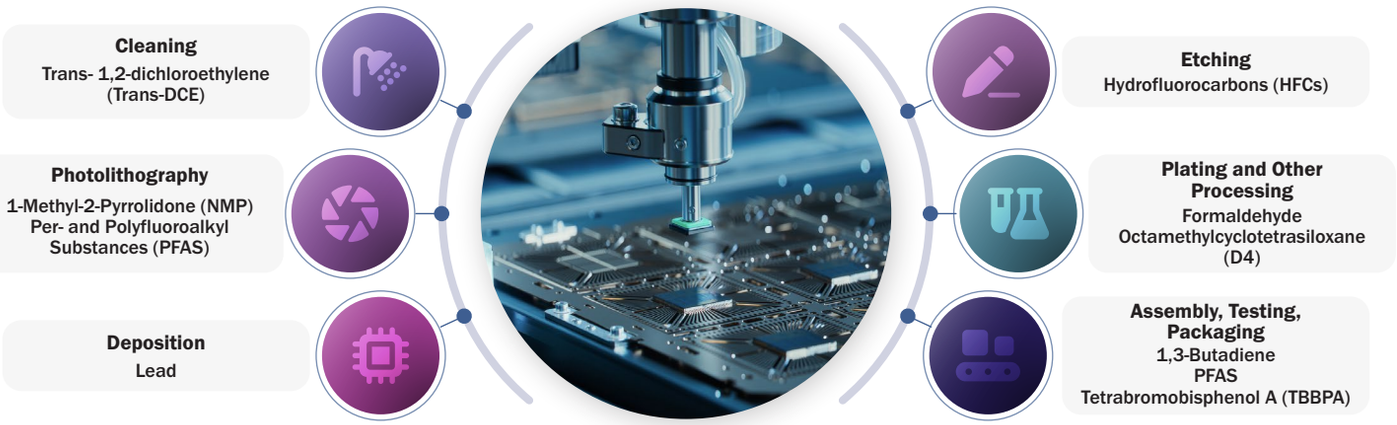
CMRMP leads engagement with regulatory agencies and collaborates across the Department and the industrial base to collect emerging scientific and technical information to anticipate changes to environmental and occupational standards that impact the national defense mission.

ASSISTANT SECRETARY OF WAR ENERGY, INSTALLATIONS, & ENVIRONMENT

What Are the Chemical and Material Risks?

Many chemicals critical to producing semiconductors are undergoing risk evaluation by the U.S. Environmental Protection Agency (EPA) under Section 6 of the Toxic Substances Control Act (TSCA), which authorizes EPA to prohibit or limit the manufacture, processing, distribution in commerce, use, or disposal of a chemical that presents an unreasonable risk to human health or the environment.

Such critical chemicals currently undergoing risk evaluation are formaldehyde, octamethylcyclotetrasiloxane (D4), tetrabromobisphenol A (TBBPA), and trans-1,2-dichloroethylene (trans-DCE). Others, such as n-Methylpyrrolidone (NMP) are currently facing risk management and potential restrictions. EPA has not restricted existing uses of per- and polyfluoroalkyl substances (PFAS) in semiconductors, but market phase outs, manufacturer liability, complex geopolitical escalation dynamics, and the evolving regulatory landscape could impact all levels of the PFAS supply chain. Other critical chemicals face evolving regulatory actions, including lead under international restrictions and hydrofluorocarbons (HFCs) under U.S. and European Union phasedown requirements.



Why Does It Matter?

The United States must continue incentivizing the development of domestic manufacturing of certain semiconductors, certain semiconductor manufacturing equipment such as advanced lithography and etching tools, and their derivative products, reducing reliance on imports of certain advanced computing chips and certain derivative products, and promoting research and development in support of the United States' high-tech infrastructure and capabilities.[1] This requires access to the process chemicals critical to manufacturing these essential products.

1. Presidential Proclamation. Adjusting Imports of Semiconductors, Semiconductor Manufacturing Equipment, and Their Derivative Products into the United States. https://www.whitehouse.gov/presidential-actions/2026/01/adjusting-imports-of-semiconductors-semiconductor-manufacturing-equipment-and-their-derivative-products-into-the-united-states/. 14 January 2026.

Contact Us

https://www.denix.osd.mil/cmrmp/

For questions or to share concerns on emerging chemical regulations or chemical availability, please reach out to the program mailbox: osd.pentagon.ousd-atl.mbx.cmrmp@mail.mil.

Opportunities to collaborate may include requests for information (RFIs) to identify and understand chemical uses and risks. RFIs are issued through SAM.gov, and potential responders are encouraged to refer to the site for all relevant information.