

**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**Post-Effective Amendment No. 1**  
**to**  
**FORM S-8**  
**REGISTRATION STATEMENT**  
**UNDER**  
**THE SECURITIES ACT OF 1933**

**ENTEGRIS, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**129 Concord Road, Billerica, MA**  
(Address of Principal Executive Offices)

**41-1941551**  
(I.R.S. Employer  
Identification No.)

**01821**  
(Zip Code)

**2001 Equity Incentive Plan**  
**2003 Employment Inducement and Acquisition Stock Option Plan**  
**2001 Non-Employee Director Stock Option Plan**  
**Conversion Plan for Millipore Options**  
(Full title of the plan)

**Peter W. Walcott**  
**Senior Vice President, Secretary, and General Counsel**  
**Entegris, Inc.**  
**129 Concord Road**  
**Billerica, MA 01821**  
**(978) 436-6500**

(Name, address and telephone number, including area code, of agent for service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐

Accelerated filer ☒

Non-accelerated filer ☐ (Do not check if a smaller reporting company)

Smaller reporting company ☐

---

## EXPLANATORY NOTE

Entegris, Inc. (the “Registrant”) is filing this Post-Effective Amendment No. 1 to Form S-8 Registration Statement to deregister certain securities originally registered by the Registrant pursuant to its Registration Statement on Form S-8 filed with the Securities and Exchange Commission (the “Commission”) on August 16, 2005 (File No. 333-127599) (the “Prior Registration Statement”), with respect to shares of the Registrant’s common stock, par value \$0.01 per share (the “Common Stock”), thereby registered for offer or sale pursuant to the Registrant’s 2001 Equity Incentive Plan, 2003 Employment Inducement and Acquisition Stock Option Plan, 2001 Non-Employee Director Stock Option Plan and Conversion Plan for Millipore Options (the “Prior Plans”).

The Prior Plans were frozen on May 5, 2010. The Registrant adopted a new equity incentive plan, the Entegris, Inc. 2010 Stock Plan (the “2010 Plan”), which replaced the Prior Plans as of May 5, 2010, the date the Registrant’s shareholders approved the 2010 Plan. Subsequent to the replacement of the Prior Plans on May 5, 2010, no awards were made under the Prior Plans, and no future awards will be made under the Prior Plans. As of May 28, 2010, 2,120,051 shares of Common Stock originally registered under the Prior Registration Statement remained available for offer and sale under the Prior Registration Statement. In accordance with the undertaking contained in the Prior Registration Statement pursuant to Item 512 of Regulation S-K, this Post-Effective Amendment No. 1 to the Prior Registration Statement is being filed to deregister and remove the previously registered shares of Common Stock that remain unissued and unsold under the Prior Registration Statement as of the date hereof. Furthermore, as of May 28, 2010, 3,758,182 shares of Common Stock remained subject to outstanding awards previously granted under the Prior Plans (the “Prior Awards”). The Prior Registration Statement will remain in effect to cover the potential exercise of the Prior Awards.

---

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, Entegris, Inc. certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Post-Effective Amendment No. 1 to the Prior Registration Statement on Form S-8 to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Billerica, Commonwealth of Massachusetts, on May 28<sup>th</sup>, 2010.

ENTEGRIS, INC.

By /s/ PETER W. WALCOTT

Peter W. Walcott

Senior Vice President & General Counsel