
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

SCHEDULE 13G
(Rule 13d-102)

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO
§240.13d-1(b), (c) AND (d) AND AMENDMENTS THERETO FILED PURSUANT TO
§240.13d-2**

**Under the Securities Exchange Act of 1934
(Amendment No.)***

INTERMOLECULAR, INC.
(Name of Issuer)

COMMON STOCK, \$0.001 PAR VALUE PER SHARE
(Title of Class of Securities)

45882D109
(CUSIP Number)

December 31, 2014
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- ☐ Rule 13d-1(b)
- ☒ Rule 13d-1(c)
- ☐ Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	Name of reporting person Entegris, Inc.		
2	Check the appropriate box if a member of a group (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC use only		
4	Citizenship or place of organization Delaware		
Number of shares beneficially owned by each reporting person with	5	Sole voting power 0	
	6	Shared voting power 2,384,182	
	7	Sole dispositive power 0	
	8	Shared dispositive power 2,384,182	
9	Aggregate amount beneficially owned by each reporting person 2,384,182		
10	Check box if the aggregate amount in Row (9) excludes certain shares <input type="checkbox"/>		
11	Percent of class represented by amount in Row (9) 4.9%*		
12	Type of reporting person CO		

* Based on 48,351,253 shares of common stock outstanding, which is the total number of shares outstanding as of February 25, 2015 as reported in the Issuer's Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 27, 2015.

1	Name of reporting person ATMI, Inc.		
2	Check the appropriate box if a member of a group (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC use only		
4	Citizenship or place of organization Delaware		
Number of shares beneficially owned by each reporting person with	5	Sole voting power 0	
	6	Shared voting power 2,384,182	
	7	Sole dispositive power 0	
	8	Shared dispositive power 2,384,182	
9	Aggregate amount beneficially owned by each reporting person 2,384,182		
10	Check box if the aggregate amount in Row (9) excludes certain shares <input type="checkbox"/>		
11	Percent of class represented by amount in Row (9) 4.9%*		
12	Type of reporting person CO		

* Based on 48,351,253 shares of common stock outstanding, which is the total number of shares outstanding as of February 25, 2015 as reported in the Issuer's Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 27, 2015.

1	Name of reporting person Advanced Technology Materials, Inc.	
2	Check the appropriate box if a member of a group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC use only	
4	Citizenship or place of organization Delaware	
Number of shares beneficially owned by each reporting person with	5	Sole voting power 0
	6	Shared voting power 2,384,182
	7	Sole dispositive power 0
	8	Shared dispositive power 2,384,182
9	Aggregate amount beneficially owned by each reporting person 2,384,182	
10	Check box if the aggregate amount in Row (9) excludes certain shares <input type="checkbox"/>	
11	Percent of class represented by amount in Row (9) 4.9%*	
12	Type of reporting person CO	

* Based on 48,351,253 shares of common stock outstanding, which is the total number of shares outstanding as of February 25, 2015 as reported in the Issuer's Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 27, 2015.

Item 1(a). Name of Issuer:

Intermolecular, Inc.

Item 1(b). Address of Issuer’s Principal Executive Offices:

3011 N. First Street
San Jose, CA 95134

Item 2(a). Name of Person Filing:

This Schedule 13G is being filed by Entegris, Inc., a Delaware corporation (“Entegris”), and its subsidiaries ATMI, Inc., a Delaware corporation (“ATMI”), and Advanced Technology Materials, Inc. (“Advanced”).

Item 2(b). Address of Principal Business Office or, if none, Residence:

The address for each filer is:
129 Concord Road
Billerica, MA 01821

Item 2(c). Citizenship:

Entegris, ATMI and Advanced are Delaware corporations.

Item 2(d). Title of Class of Securities:

Common Stock, \$0.001 par value per share

Item 2(e). CUSIP Number:

45882D109

Item 3. If this statement is filed pursuant to §§240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

- (a) ☐ Broker or dealer registered under Section 15 of the Act (15 U.S.C. 78o);
- (b) ☐ Bank as defined in Section 3(a)(6) of the Act (15 U.S.C. 78c);
- (c) ☐ Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c);
- (d) ☐ Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C 80a-8);
- (e) ☐ An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E);

- (f) ☐ An employee benefit plan or endowment fund in accordance with §240.13d-l(b)(1)(ii)(F);
- (g) ☐ A parent holding company or control person in accordance with § 240.13d-l(b)(1)(ii)(G);
- (h) ☐ A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i) ☐ A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j) ☐ A non-U.S. institution in accordance with §240.13d-l(b)(1)(ii)(J).
- (k) ☐ Group, in accordance with §240.13d-l(b)(1)(ii)(K).

If filing as a non-U.S. institution in accordance with §240.13d-l(b)(1)(ii)(J), please specify the type of institution: .

Item 4. Ownership.

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

- (a) Amount beneficially owned: 2,384,182 shares of common stock
- (b) Percent of class: 4.9% (based on 48,351,253 shares of common stock outstanding, which is the total number of shares outstanding as of February 25, 2015 as reported in the Issuer's Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 27, 2015)
- (c) Number of shares as to which the person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: Entegris and ATMI may be deemed to have shared voting power with respect to the 2,384,182 shares of common stock directly held by Advanced.
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: Entegris and ATMI may be deemed to have shared voting power with respect to the 2,384,182 shares of common stock directly held by Advanced.

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting persons have ceased to be the beneficial owner of more than 5 percent of the class of securities, check the following ☒.

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Not applicable.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person.

Not applicable.

Item 8. Identification and Classification of Members of the Group.

Not applicable.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certifications.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: March 19, 2015

ENTEGRIS, INC.

By: /s/ Gregory B. Graves

Name: Gregory B. Graves

Title: Executive Vice President and Chief Financial Officer

ATMI, INC.

By: /s/ Gregory B. Graves

Name: Gregory B. Graves

Title: Executive Vice President and Chief Financial Officer

ADVANCED TECHNOLOGY MATERIALS, INC.

By: /s/ Gregory B. Graves

Name: Gregory B. Graves

Title: Executive Vice President and Chief Financial Officer

JOINT FILING AGREEMENT

The undersigned hereby agrees that the statement on Schedule 13G with respect to the common stock of Intermolecular, Inc. dated as of March 19, 2015 is, and any further amendments thereto signed by each of the undersigned shall be, filed on behalf of each of the undersigned pursuant to and in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended.

Dated: March 19, 2015

ENTEGRIS, INC.

By: /s/ Gregory B. Graves

Name: Gregory B. Graves

Title: Executive Vice President and Chief Financial Officer

ATMI, INC.

By: /s/ Gregory B. Graves

Name: Gregory B. Graves

Title: Executive Vice President and Chief Financial Officer

ADVANCED TECHNOLOGY MATERIALS, INC.

By: /s/ Gregory B. Graves

Name: Gregory B. Graves

Title: Executive Vice President and Chief Financial Officer