UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended October 1, 2022

OR ☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________

Commission file number: 001-32598

Entegris, Inc.
(Exact name of registrant as specified in its charter)

Delaware **(State or other jurisdiction of incorporation or organization)**	**41-1941551** **(I.R.S. Employer Identification No.)**
129 Concord Road, Billerica, Massachusetts **(Address of principal executive offices)**	**01821** **(Zip Code)**

(978) 436-6500
(Registrant's telephone number, including area code)

None
(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, $0.01 par value per share	**ENTG**	**The Nasdaq Stock Market LLC**

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of October 31, 2022, there were 149,034,584 shares of the registrant's common stock outstanding.

ENTEGRIS, INC. AND SUBSIDIARIES
FORM 10-Q
TABLE OF CONTENTS
FOR THE QUARTER ENDED OCTOBER 1, 2022

Cautionary Statements

This Quarterly Report on Form 10-Q contains “forward-looking statements.” The words “believe,” “expect,” “anticipate,” “intend,” “estimate,” “forecast,” “project,” “should,” “may,” “will,” “would” or the negative thereof and similar expressions are intended to identify such forward-looking statements. These forward-looking statements may include statements about the ongoing impacts of the COVID-19 pandemic and the conflict in Ukraine on the Company’s operations and markets, including supply chain issues and inflationary pressures related thereto; future period guidance or projections; the Company’s performance relative to its markets, including the drivers of such performance; market and technology trends, including the duration and drivers of any growth trends; the development of new products and the success of their introductions; the focus of the Company’s engineering, research and development projects; the Company’s ability to execute on our business strategies, including with respect to Company’s expansion of its manufacturing presence in Taiwan; the Company’s capital allocation strategy, which may be modified at any time for any reason, including share repurchases, dividends, debt repayments and potential acquisitions; the impact of the acquisitions the Company has made and commercial partnerships the Company has established, including the acquisition of CMC Materials, Inc. (“CMC Materials”); trends relating to the fluctuation of currency exchange rates; future capital and other expenditures, including estimates thereof; the Company’s expected tax rate; the impact, financial or otherwise, of any organizational changes; the impact of accounting pronouncements; quantitative and qualitative disclosures about market risk; and other matters. These forward-looking statements are based on current management expectations and assumptions only as of the date of this Quarterly Report, are not guarantees of future performance and involve substantial risks and uncertainties that are difficult to predict and that could cause actual results to differ materially from the results expressed in, or implied by, these forward-looking statements. These risks and uncertainties include, but are not limited to, weakening of global and/or regional economic conditions, generally or specifically in the semiconductor industry, which could decrease the demand for the Company’s products and solutions; the level of, and obligations associated with, the Company’s indebtedness, including the debts incurred in connection with the acquisition of CMC Materials; risks related to the acquisition and integration of CMC Materials, including unanticipated difficulties or expenditures relating thereto, the ability to achieve the anticipated synergies and value-creation contemplated by the acquisition of CMC Materials and the diversion of management time on transaction-related matters; risks related to the COVID-19 pandemic on the global economy and financial markets, as well as on the Company, its customers and suppliers, which may impact its sales, gross margin, customer demand and its ability to supply its products to its customers; raw material shortages, supply and labor constraints, price increases, inflationary pressures and rising interest rates; operational, political and legal risks of the Company’s international operations;

the Company's dependence on sole source and limited source suppliers; the Company's ability to meet rapid demand shifts; the Company's ability to continue technological innovation and introduce new products to meet customers' rapidly changing requirements; substantial competition; the Company's concentrated customer base; the Company's ability to identify, complete and integrate acquisitions, joint ventures or other transactions; the Company's ability to effectively implement any organizational changes; the Company's ability to protect and enforce intellectual property rights; the ongoing conflict in Ukraine and the global response thereto; the increasing complexity of certain manufacturing processes; changes in government regulations of the countries in which the Company operates, including the imposition of tariffs, export controls and other trade laws and restrictions and changes to national security and international trade policy, especially as they relate to China; fluctuation of currency exchange rates; fluctuations in the market price of the Company's stock; and other risk factors and additional information described in the Company's filings with the Securities and Exchange Commission (the "SEC"), including under the heading "Risk Factors" in Item 1A of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed on February 4, 2022, and in the Company's other SEC filings. Except as required under the federal securities laws and the rules and regulations of the SEC, the Company undertakes no obligation to update publicly any forward-looking statements or information contained herein, which speak as of their respective dates.

PART 1. FINANCIAL INFORMATION
Item 1. Financial Statements

ENTEGRIS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)

(In thousands, except share and per share data)	October 1, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 752,787	$ 402,565
Restricted cash	1,880	—
Trade accounts and notes receivable, net of allowance for credit losses of $4,304 and $2,349	519,793	347,413
Inventories, net	823,637	475,213
Deferred tax charges and refundable income taxes	22,024	35,312
Other current assets	102,155	52,867
Total current assets	2,222,276	1,313,370
Property, plant and equipment, net of accumulated depreciation of $1,120,337 and $653,104	1,383,693	654,098
Other assets:		
Right-of-use assets	95,397	66,563
Goodwill	4,405,292	793,702
Intangible assets, net of accumulated amortization of $585,137 and $494,601	1,969,729	335,113
Deferred tax assets and other noncurrent tax assets	18,637	17,671
Other	38,380	11,379
Total assets	$ 10,133,404	$ 3,191,896
LIABILITIES AND EQUITY		
Current liabilities:		
Short-term debt, including current portion of long-term debt	$ 219,787	$ —
Accounts payable	187,697	130,734
Accrued payroll and related benefits	149,269	108,818
Accrued interest payable	74,513	6,073
Other accrued liabilities	166,924	84,240
Income taxes payable	42,831	49,136
Total current liabilities	841,021	379,001
Long-term debt, excluding current maturities, net of unamortized discount and debt issuance costs of $147,515 and $7,973	5,627,698	937,027
Pension benefit obligations and other liabilities	54,048	37,816
Deferred tax liabilities and other noncurrent tax liabilities	411,450	64,170
Long-term lease liability	82,870	60,101
Commitments and contingent liabilities	—	—
Equity:		
Preferred stock, par value $.01; 5,000,000 shares authorized; none issued and outstanding as of October 1, 2022 and December 31, 2021	—	—
Common stock, par value $.01; 400,000,000 shares authorized; issued and outstanding shares as of October 1, 2022: 149,236,984 and 149,034,584, respectively; issued and outstanding shares as of December 31, 2021: 135,719,366 and 135,516,966, respectively	1,492	1,357
Treasury stock, at cost: 202,400 shares held as of October 1, 2022 and December 31, 2021	(7,112)	(7,112)
Additional paid-in capital	2,190,961	879,845
Retained earnings	988,848	879,776
Accumulated other comprehensive loss	(57,872)	(40,085)
Total equity	3,116,317	1,713,781
Total liabilities and equity	$ 10,133,404	$ 3,191,896

See the accompanying notes to condensed consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

(In thousands, except per share data)	Three months ended October 1, 2022	Three months ended October 2, 2021	Nine months ended October 1, 2022	Nine months ended October 2, 2021
Net sales	$ 993,828	$ 579,493	$ 2,335,963	$ 1,663,689
Cost of sales	622,157	315,289	1,344,075	899,115
Gross profit	371,671	264,204	991,888	764,574
Selling, general and administrative expenses	226,446	71,032	404,239	215,042
Engineering, research and development expenses	64,990	41,972	160,953	121,692
Amortization of intangible assets	65,346	11,843	90,491	35,616
Operating income	14,889	139,357	336,205	392,224
Interest expense	84,150	9,395	129,027	31,744
Interest income	(1,395)	(56)	(2,065)	(181)
Other expense, net	12,852	1,917	27,373	29,807
(Loss) income before income tax expense	(80,718)	128,101	181,870	330,854
Income tax (benefit) expense	(7,015)	10,640	30,377	39,947
Net (loss) income	$ (73,703)	$ 117,461	$ 151,493	$ 290,907
Basic (loss) earnings per common share	$ (0.50)	$ 0.87	$ 1.08	$ 2.15
Diluted (loss) earnings per common share	$ (0.50)	$ 0.86	$ 1.08	$ 2.13
Weighted shares outstanding:				
Basic	148,570	135,583	140,045	135,383
Diluted	148,570	136,631	140,892	136,556

See the accompanying notes to condensed consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME
(Unaudited)

	Three months ended		Nine months ended	
(In thousands)	**October 1, 2022**	**October 2, 2021**	**October 1, 2022**	**October 2, 2021**
Net (loss) income	$ (73,703)	$ 117,461	$ 151,493	$ 290,907
Other comprehensive (loss) income, net of tax				
Foreign currency translation adjustments	(37,461)	637	(48,603)	(1,622)
Pension liability adjustments	—	—	73	39
Interest rate swap - cash flow hedge	40,028	—	40,028	—
Income tax expense	(9,285)	—	(9,285)	—
Total Interest rate swap - cash flow hedge	30,743	—	30,743	—
Other comprehensive (loss) income	(6,718)	637	(17,787)	(1,583)
Comprehensive (loss) income	$ (80,421)	$ 118,098	$ 133,706	$ 289,324

See the accompanying notes to condensed consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF EQUITY

(Unaudited)

(In thousands)	Common shares outstanding	Common stock	Treasury shares	Treasury stock	Additional paid-in capital	Retained earnings	Foreign currency translation adjustments	Defined benefit pension adjustments	Interest Rate Swap - Cash flow hedge	Total
Balance at December 31, 2020	135,149	$ 1,351	202	$ (7,112)	$ 844,850	$ 577,833	$ (36,588)	$ (840)	$ —	$ 1,379,494
Shares issued under stock plans	392	4	—	—	(13,470)	—	—	—	—	(13,466)
Share-based compensation expense	—	—	—	—	7,138	—	—	—	—	7,138
Repurchase and retirement of common stock	(145)	(1)	—	—	(904)	(14,095)	—	—	—	(15,000)
Dividends declared ($0.08 per share)	—	—	—	—	8	(10,840)	—	—	—	(10,832)
Pension liability adjustment	—	—	—	—	—	—	—	39	—	39
Foreign currency translation	—	—	—	—	—	—	(3,716)	—	—	(3,716)
Net income	—	—	—	—	—	84,676	—	—	—	84,676
Balance at April 3, 2021	135,396	$ 1,354	202	$ (7,112)	$ 837,622	$ 637,574	$ (40,304)	$ (801)	$ —	$ 1,428,333
Shares issued under stock plans	559	5		—	15,185	—	—	—	—	15,190
Share-based compensation expense	—	—	—	—	7,519	—	—	—	—	7,519
Repurchase and retirement of common stock	(130)	(1)	—	—	(813)	(14,186)	—	—	—	(15,000)
Dividends declared ($0.08 per share)	—	—	—	—	7	(10,945)	—	—	—	(10,938)
Foreign currency translation	—	—	—	—	—	—	1,457	—	—	1,457
Net income	—	—	—	—	—	88,770	—	—	—	88,770
Balance at July 3, 2021	135,825	$ 1,358	202	$ (7,112)	$ 859,520	$ 701,213	$ (38,847)	$ (801)	—	$ 1,515,331
Shares issued under stock plans	65	1		—	779	—	—	—	—	780
Share-based compensation expense	—	—	—	—	7,467	—	—	—	—	7,467
Repurchase of common stock	(166)	(2)	—	—	(1,050)	(18,948)	—	—	—	(20,000)
Dividends declared ($0.08 per share)	—	—	—	—	—	(10,896)	—	—	—	(10,896)
Foreign currency translation	—	—	—	—	—	—	637	—	—	637
Net income	—	—	—	—	—	117,461	—	—	—	117,461
Balance at October 2, 2021	135,724	$ 1,357	202	$ (7,112)	$ 866,716	$ 788,830	$ (38,210)	$ (801)	$ —	$ 1,610,780

(In thousands)	Common shares outstanding	Common stock	Treasury shares	Treasury stock	Additional paid-in capital	Retained earnings	Foreign currency translation adjustments	Defined benefit pension adjustments	Interest Rate Swap - Cash flow hedge	Total
Balance at December 31, 2021	135,719	$ 1,357	202	$ (7,112)	$ 879,845	$ 879,776	$ (38,863)	$ (1,222)	$ —	$ 1,713,781
Shares issued under stock plans	366	4	—	—	(12,742)	—	—	—	—	(12,738)
Share-based compensation expense	—	—	—	—	9,285	—	—	—	—	9,285
Dividends declared ($0.10 per share)	—	—	—	—	—	(13,660)	—	—	—	(13,660)
Pension liability adjustment	—	—	—	—	—	—	—	73	—	73
Foreign currency translation	—	—	—	—	—	—	(2,128)	—	—	(2,128)
Net income	—	—	—	—	—	125,705	—	—	—	125,705
Balance at April 2, 2022	136,085	$ 1,361	202	$ (7,112)	$ 876,388	$ 991,821	$ (40,991)	$ (1,149)	$ —	$ 1,820,318
Shares issued under stock plans	88	1		—	5,397	—	—	—	—	5,398
Share-based compensation expense	—	—	—	—	10,182	—	—	—	—	10,182
Dividends declared ($0.10 per share)	—	—	—	—	—	(13,661)	—	—	—	(13,661)
Foreign currency translation	—	—	—	—	—	—	(9,014)	—	—	(9,014)
Net income	—	—	—	—	—	99,491	—	—	—	99,491
Balance at July 2, 2022	136,173	$ 1,362	202	$ (7,112)	$ 891,967	$ 1,077,651	$ (50,005)	$ (1,149)	—	$ 1,912,714
Shares issued under stock plans	137	1		—	(4,644)	—	—	—	—	(4,643)
Share-based compensation expense	—	—	—	—	38,077	—	—	—	—	38,077
Issuance of common stock in connection with CMC Materials acquisition	12,927	129	—	—	1,265,561	—	—	—	—	1,265,690
Dividends declared ($0.10 per share)	—	—	—	—	—	(15,100)	—	—	—	(15,100)
Interest Rate Swap - Cash flow hedge	—	—	—	—	—	—	—	—	30,743	30,743
Foreign currency translation	—	—	—	—	—	—	(37,461)	—	—	(37,461)
Net loss	—	—	—	—	—	(73,703)	—	—	—	(73,703)
Balance at October 1, 2022	149,237	$ 1,492	202	$ (7,112)	$ 2,190,961	$ 988,848	$ (87,466)	$ (1,149)	$ 30,743	$ 3,116,317

See the accompanying notes to condensed consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

(In thousands)	Nine months ended October 1, 2022	Nine months ended October 2, 2021
Operating activities:		
Net income	$ 151,493	$ 290,907
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	93,489	67,510
Amortization	90,491	35,616
Share-based compensation expense	57,544	22,124
Charge for fair value mark-up of acquired inventory sold	61,932	—
Provision for deferred income taxes	(56,964)	(12,307)
Loss on extinguishment of debt and modification	2,235	23,338
Charge for excess and obsolete inventory	17,582	10,066
Other	38,670	265
Changes in operating assets and liabilities:		
Trade accounts and notes receivable	(34,378)	(53,358)
Inventories	(180,335)	(115,187)
Accounts payable and accrued liabilities	83,307	37,577
Other current assets	(4,248)	10,575
Income taxes payable and refundable income taxes	(15,637)	(35,275)
Other	15,049	2,623
Net cash provided by operating activities	320,230	284,474
Investing activities:		
Acquisition of property, plant and equipment	(318,836)	(133,986)
Acquisition of businesses, net of cash acquired	(4,474,925)	(2,250)
Other	1,124	4,416
Net cash used in investing activities	(4,792,637)	(131,820)
Financing activities:		
Proceeds from revolving credit facility and short-term debt	476,000	451,000
Payments of revolving credit facility and short-term debt	(271,000)	(601,000)
Proceeds from long-term debt	4,940,753	—
Payments of long-term debt	(145,000)	—
Payments for debt extinguishment costs	—	(19,080)
Payments for debt issuance costs	(99,489)	(5,069)
Payments for dividends	(42,413)	(32,650)
Issuance of common stock	10,764	17,872
Repurchase and retirement of common stock	—	(50,000)
Taxes paid related to net share settlement of equity awards	(22,747)	(15,368)
Other	(859)	(218)
Net cash provided by (used in) financing activities	4,846,009	(254,513)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(21,500)	(3,282)
Increase (decrease) in cash, cash equivalents and restricted cash	352,102	(105,141)
Cash, cash equivalents and restricted cash at beginning of period	402,565	580,893
Cash, cash equivalents and restricted cash at end of period	$ 754,667	$ 475,752

See the accompanying notes to condensed consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)
(Unaudited)

Supplemental Cash Flow Information (unaudited) ***(In thousands)***	Nine months ended October 1, 2022	Nine months ended October 2, 2021
Non-cash transactions:		
Deferred acquisition payments	$ —	$ 250
Equipment purchases in accounts payable	19,362	15,965
Increase (Decrease) in dividends payable	8	(16)
Equity consideration on acquisition of CMC Materials Inc	1,265,690	—
Schedule of interest and income taxes paid:		
Interest paid less capitalized interest	22,917	29,759
Income taxes paid, net of refunds received	96,729	85,409

See the accompanying notes to condensed consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations Entegris, Inc. (“Entegris”, “the Company”, “us”, “we”, or “our”) is a leading supplier of advanced materials and process solutions for the semiconductor and other high-technology industries.

Principles of Consolidation The condensed consolidated financial statements include the accounts of the Company and its majority-owned subsidiaries. Intercompany profits, transactions and balances have been eliminated in consolidation.

Use of Estimates The preparation of condensed consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, particularly receivables, inventories, property, plant and equipment, right-of-use assets, goodwill, intangibles, accrued expenses, short-term and long-term lease liability, income taxes and related accounts, and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Basis of Presentation The condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States and contain all adjustments considered necessary, and are of a normal recurring nature, to present fairly the financial position as of October 1, 2022 and December 31, 2021, and the results of operations and comprehensive income for the three and nine months ended October 1, 2022 and October 2, 2021, the equity statements as of and for the three and nine months ended October 1, 2022 and October 2, 2021, and cash flows for the nine months ended October 1, 2022 and October 2, 2021.

Our recently acquired subsidiary, CMC Materials, Inc., follows a monthly reporting calendar. The third quarter of 2022 for CMC Materials refers to the three months ended September 30, 2022, whereas the Company’s third quarter is October 1, 2022. The Company believes that use of the different fiscal periods for this entity has not had a material impact on the Company’s consolidated financial position, results of operations, or liquidity. All significant intercompany balances and transactions have been eliminated in consolidation.

The condensed consolidated financial statements and accompanying notes are presented as permitted by Form 10-Q and do not contain certain information included in the Company’s annual consolidated financial statements and notes. The information included in this Quarterly Report on Form 10-Q should be read in conjunction with Management’s Discussion and Analysis and consolidated financial statements and notes thereto included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2021. The results of operations for the three and nine months ended October 1, 2022 are not necessarily indicative of the results to be expected for the full year.

Fair Value of Financial Instruments The carrying value of cash and cash equivalents, restricted cash, accounts receivable, accounts payable, accrued payroll and related benefits, and other accrued liabilities approximates fair value due to the short maturity of those items. The fair value of long-term debt, including current maturities, was $5,427.4 million at October 1, 2022, compared to the carrying amount of long-term debt, including current maturities, of $5,847.5 million at October 1, 2022.

Derivatives and Hedging The Company is exposed to various market risks, including risks associated with interest rates and foreign currency exchange rates. We enter into certain derivative transactions to mitigate the volatility associated with these exposures. We have policies in place that define acceptable instrument types we may enter into and we have established controls to limit our market risk exposure. We do not use derivative financial instruments for trading or speculative purposes. In addition, all derivatives, whether designated in hedging relationships or not, are recorded on the condensed consolidated balance sheets at fair value on a gross basis.

Interest Rate Swaps
The fair value of the interest rate swap is estimated using standard valuation models using market-based observable inputs over the contractual term, including one-month Secured Overnight Financing Rate (“SOFR”) based yield curves, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value. We have designated these swap agreements as cash flow hedges. As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income (loss), while the ineffective portion is recorded as a component of Interest expense. Changes in the method by which we pay interest from one-month SOFR to another rate of interest could create ineffectiveness in the swaps, and result in amounts being reclassified from other comprehensive (loss) income into Net (loss) income. Hedge effectiveness is tested quarterly to determine if hedge treatment is

appropriate. Realized gains and losses are recorded on the same financial statement line as the hedged item, which is Interest expense.

Foreign Currency Contracts Not Designated as Hedges
On a regular basis, we enter into forward foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. These foreign exchange contracts do not qualify for hedge accounting; therefore, the gains and losses resulting from the impact of currency exchange rate movements on our forward foreign exchange contracts are recognized as Other expense, net in the accompanying condensed consolidated statements of operations in the period in which the exchange rates change.

Recently Adopted Accounting Pronouncements In October 2021, the FASB issued ASU 2021-08, Business Combinations (Topic 805), Accounting for Contract Assets and Contract Liabilities from Contracts with Customers, which requires an acquirer to recognize and measure contract assets and liabilities acquired in a business combination in accordance with Revenue from Contracts with Customers ("Topic 606") rather than adjust them to fair value at the acquisition date.

The Company adopted ASU No. 2021-08 on July 3, 2022, and there was no material effect on its condensed consolidated financial statements.

Recently Issued Accounting Pronouncements The Company currently has no material recent accounting pronouncements yet to be adopted.

2. REVENUES

The following table provides information about current contract liabilities from contracts with customers. The contract liabilities are included in other accrued liabilities balance in the condensed consolidated balance sheet.

(In thousands)	October 1, 2022	October 2, 2021
Balance at beginning of period	$ 23,050	$ 13,852
Revenue recognized that was included in the contract liability balance at the beginning of the period	(26,444)	(13,561)
Increases due to cash received, excluding amounts recognized as revenue during the period	40,725	16,758
Additions due to acquisitions	11,108	—
Balance at end of period	$ 48,439	$ 17,049

3. ACQUISITIONS

CMC Materials, Inc.

On July 6, 2022 (the “Closing Date”), the Company completed its acquisition of CMC Materials, Inc. (“CMC Materials”), a Delaware corporation, for approximately $6.0 billion in cash and stock (the “Merger”) pursuant to an Agreement and Plan of Merger dated as of December 14, 2021 (the “Merger Agreement”). As a result of the Merger, CMC Materials became a wholly owned subsidiary of the Company. The Merger was accounted for under the acquisition method of accounting and the results of operations of CMC Materials are included in the Company's condensed consolidated financial statements as of and since July 6, 2022. CMC Materials reports into the Advanced Planarization Solutions and Specialty Chemicals and Engineered Materials segments of the Company. Direct costs of $31.9 million and $39.3 million associated with the acquisition of CMC Materials, consisting primarily of professional and consulting fees, were expensed as incurred in the three and nine months ended October 1, 2022, respectively. These costs are classified as selling, general and administrative expense in the Company's condensed consolidated statement of operations. The amounts of net sales and net loss from CMC Materials since the acquisition date included in the consolidated statement of operations for the three and nine months ended October 1, 2022 are $312.2 million and $83.9 million, respectively.

CMC Materials is a global supplier of consumable materials, primarily to semiconductor manufacturers. The Company's products play a critical role in the production of advanced semiconductor devices, helping to enable the manufacture of smaller, faster and more complex devices by its customers. The acquisition was executed to expand the Company’s product offering base and technological base, enhance the Company’s materials and process solutions for the most advanced manufacturing environments and help customers improve productivity, performance and total cost of ownership.

The purchase price of CMC Materials consisted of the following:

(In thousands):	
Cash paid to CMC Materials’ shareholders	$ 3,836,983
Stock paid to CMC Materials’ shareholders	1,265,690
Repayment of CMC Materials’ indebtedness	918,578
Total purchase price	6,021,251
Less cash and cash equivalents acquired	280,636
Total purchase price, net of cash acquired	$ 5,740,615

Under the terms of the Merger Agreement, the Company paid $133.00 per share for all outstanding shares of CMC Materials (excluding treasury shares). In addition, the Company settled all outstanding share-based compensation awards held by CMC Materials’ employees at the same per share price except for certain unvested performance units that were replaced by the Company’s restricted share units. The acquisition method of accounting requires the Company to include the amount associated with pre-combination service as purchase price for the acquisition, reflected in the table immediately above.

The Merger was funded with existing cash balances as well as funds raised by the Company through the issuance of debt in the form of a new term loan facility in the aggregate principal amount of $2,495.0 million, senior secured notes due 2029 in an aggregate principal amount of $$1,600.0 million, senior unsecured notes due 2030 in an aggregate principal amount of $895.0 million, and a 364-Day Bridge Credit Facility in the aggregate principal amount of $275.0 million (collectively “CMC

Materials Acquisition Financing”). For additional information, see Note 7 to the Company’s condensed consolidated financial statements.

The following table summarizes the allocation of the purchase price to the fair values assigned to the assets acquired and liabilities assumed at the date of the Merger:

(In thousands):		July 6, 2022
Cash and cash equivalents	$	280,636
Accounts receivable and other current assets		206,887
Inventory		256,598
Property, plant and equipment		534,363
Identifiable intangible assets		1,727,119
Other noncurrent assets		44,149
Current liabilities		(213,089)
Deferred tax liabilities and other noncurrent liabilities		(448,550)
Net assets acquired		2,388,113
Goodwill		3,633,138
Total purchase price	$	6,021,251

The fair value of acquired inventories of $256.6 million is provisional pending the Company's review of the calculations underlying the valuation for those assets from a third-party valuation firm and is valued at the estimated selling price less the cost of disposal and reasonable profit for the selling effort. The fair value write-up of acquired finished goods inventory was $61.9 million, the amount of which will be amortized over the expected turn of the acquired inventory.

The fair value of acquired property, plant and equipment of $534.4 million is provisional pending the Company's review of the valuation report for those assets from a third-party valuation firm. Property, plant and equipment is valued at its value-in-use, unless there was a known plan to dispose of an asset.

The fair value of the acquired intangible assets is provisional pending the Company’s review of the valuation report for those assets from a third-party valuation firm. The Company recognized the following provisional finite-lived intangible assets as part of the acquisition of CMC Materials and will be amortized on a straight-line basis:

(In thousands)		Amount	Weighted average life in years
Developed technology	$	1,005,300	6.4
Trademarks and trade names		234,400	14.9
Customer relationships		445,700	18.2
In-process research and development		30,100	
Other		11,619	1.2
	$	1,727,119	10.7

The fair value of acquired identifiable intangible assets was determined using the “income approach” on an individual project basis. In performing these valuations, the key underlying probability-adjusted assumptions of the discounted cash flows were projected revenues, gross margin expectations and operating cost estimates. The valuations were based on the information that was available as of the acquisition date and the expectations and assumptions that have been deemed reasonable by the Company’s management. There are inherent uncertainties and management judgment required in these determinations. The fair value measurements of the assets acquired and liabilities assumed were based on valuations involving significant unobservable inputs, or Level 3 in the fair value hierarchy.

The purchase price of CMC Materials exceeded the fair value of the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed by $3,633.1 million. Cash flows used to determine the purchase price included strategic and synergistic benefits (investment value) specific to the Company, which resulted in a purchase price in excess of the fair value of identifiable net assets. The purchase price also included the fair values of other assets that were not identifiable, not separately recognizable under accounting rules (e.g., assembled workforce) or of immaterial value in addition to a goingconcern element that represents the Company's ability to earn a higher rate of return on the group of assets than would be expected on the separate assets as determined during the valuation process.This additional investment value resulted in goodwill. No amount of goodwill is expected to be deductible for tax purposes. The assignment of goodwill to the Company's reportable segments will be finalized in connection with the final valuation of assets acquired and liabilities assumed.

The final valuation of assets acquired and liabilities assumed is expected to be completed as soon as possible, but no later than one year from the acquisition date. Given the size and complexity of the acquisition, the valuation of certain assets and liabilities is still being finalized. In addition to inventory, property, plant and equipment, and identifiable intangible assets, for the reasons noted above, the Company's valuation of the CMC Materials' tax accounts is provisional pending the completion of and the Company's review of CMC Materials' tax returns to be filed for periods up to the acquisition date. To the extent that the Company's estimates require adjustment, the Company will modify the value.

The Company recognized a discrete tax benefit of $8.6 million incurred in connection with $86.3 million of acquisition and integration related costs in the third quarter of 2022. The effective income tax rate is different from the statutory rate of 21% as a result of transaction costs that must be capitalized to the stock basis of the Company's investment in CMC Materials, compensation payments to covered employees in excess of $1 million, and costs that are deemed to be associated with CMC Materials' final short period for Federal income tax purposes.

Pro Forma Results (Unaudited)

The following unaudited pro forma financial information presents the combined results of operations of the Company as if the acquisition of CMC Materials had occurred as of the beginning of the years presented. The unaudited pro forma financial information is not necessarily indicative of what the Company's consolidated results of operations actually would have been had the acquisition occurred at the beginning of each year. In addition, the unaudited pro forma financial information does not attempt to project the future results of operations of the combined company. The pro forma information does not include any potential revenue enhancements, cost synergies or other operating efficiencies that could result from the acquisition.

	Three months ended		Nine months ended	
(In thousands)	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Net sales	$ 993,828	$ 889,268	$ 2,974,780	$ 2,568,665
Net (loss) income	62,255	51,062	223,030	(230,999)
Per share amounts:				
Net (loss) income per common share - basic	$ 0.42	$ 0.34	$ 1.50	$ (1.56)
Net (loss) income per common share - diluted	$ 0.42	$ 0.34	$ 1.44	$ (1.56)

The unaudited pro forma financial information above gives effect to the following:

- The elimination of transactions between Entegris and CMC Materials, which upon completion of the Merger would be considered intercompany. This reflects the elimination of intercompany sales and associated intercompany accounts.
- Incremental amortization and depreciation expense related to the estimated fair value of identifiable intangible assets and property, plant and equipment from the purchase price allocation.
- Interest expense on the new debt raised to fund in part the consideration paid to effect the Merger using the effective interest rates.
- The elimination of interest expense, net of the one-time gain on the termination of two swap instruments which were terminated on June 24, 2022 associated with the extinguished CMC Materials' debt outstanding.
- The elimination of interest expense associated with the repayment of the $145.0 million senior secured term loan facility due 2025.
- The amortization of deferred financing costs and original issue discount associated with the aggregate new debt facilities.
- Transaction and integration costs directly attributable to the Merger were reclassed as of the beginning of the comparable prior annual reporting period.
- The incremental pro forma stock-based compensation expense for accelerated vesting upon the change in control for stock options, restricted stock units, restricted stock shares, phantom units, and other deferred restricted stock units.
- The additional cost of goods sold recognized in connection with the write-up of acquired finished goods inventory of $61.9 million. The write-up is recognized in cost of sales as the inventory is sold, which for purposes of these pro forma financial statements is assumed to occur within the first quarter after the Merger and is non-recurring in nature.

- The income tax effect of the transaction accounting adjustments related to the Merger calculated using a blended statutory income tax rate of 22.5%.

Precision Microchemicals

On November 30, 2021, the Company completed its acquisition of the Precision Microchemicals business from BASF SE. As of the date of this Quarterly Report, the Precision Microchemicals business reports into the Advanced Planarization Solutions segment of the Company. The acquisition was accounted for under the acquisition method of accounting, and the Precision Microchemicals business results of operations are included in the Company's consolidated financial statements as of and since November 30, 2021. The acquisition does not constitute a material business combination.

The purchase price for the Precision Microchemical business included cash consideration of $89.7 million (net of cash acquired), which was funded from the Company's existing cash on hand.

The purchase price of the Precision Microchemical business exceeded the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed by $42.8 million. Cash flows used to determine the purchase price included strategic and synergistic benefits (investment value) specific to the Company, which resulted in a purchase price in excess of the fair value of identifiable net assets. This additional investment value resulted in goodwill, which is expected to be deductible for income tax purposes.

The fair value of acquired identifiable intangible assets was determined using Level 3 inputs for the "income approach" on an individual asset basis. The key assumptions used in the calculation of the discounted cash flows include future revenue growth rates, future gross margin, future selling, general and administrative expense, royalty rates, and discount rates. The valuations and the underlying assumptions have been deemed reasonable by the Company's management. There are inherent uncertainties and management judgment required in these determinations.

During the quarter ended April 2, 2022, the Company finalized its fair value determination of the assets acquired and the liabilities assumed. The following table summarizes the final allocation of the purchase price to the fair values assigned to the assets acquired and liabilities assumed at the date of the acquisition:

(In thousands):	November 30, 2021	As of April 2, 2022
Inventories, net	$ 967	$ 967
Other current assets	19	19
Identifiable intangible assets	44,910	44,910
Right-of-use assets	1,912	1,912
Property, plant and equipment	1,002	1,002
Other noncurrent assets	18	18
Accounts payable and accrued liabilities	(43)	(30)
Short-term lease liability	(170)	(170)
Long-term lease liability	(1,742)	(1,742)
Net assets acquired	46,873	46,886
Goodwill	42,819	42,824
Total purchase price, net of cash acquired	$ 89,692	$ 89,710

The Company recognized the following finite-lived intangible assets as part of the acquisition of the Precision Microchemicals business:

(In thousands)	Amount	Weighted average life in years
Developed technology	$ 9,600	9.0
Trademarks and trade names	3,400	15.0
Customer relationships	31,800	15.5
Other	110	
	$ 44,910	14.1

4. RESTRICTED CASH

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheet that sum to the total of the same amounts shown in the condensed consolidated statement of cash flows.

(In thousands)	October 1, 2022	December 31, 2021
Cash and cash equivalents	$ 752,787	$ 402,565
Restricted cash	1,880	—
Total cash, cash equivalents and restricted cash	$ 754,667	$ 402,565

The restricted cash represents cash held in a “Rabbi” trust. Prior to the acquisition of CMC Materials, CMC Materials’ change in control severance protection agreements required CMC Materials to establish a Rabbi trust prior to a change in control and fully fund the trust to cover all the severance benefits that may become payable under the agreements.

5. INVENTORIES

Inventories consist of the following:

(In thousands)	October 1, 2022	December 31, 2021
Raw materials	$ 342,668	$ 191,986
Work-in-process	63,454	40,257
Finished goods	417,515	242,970
Total inventories, net	$ 823,637	$ 475,213

6. GOODWILL AND INTANGIBLE ASSETS

Goodwill activity for each of the Company’s reportable segments that carry goodwill, Specialty Chemicals and Engineered Materials (“SCEM”), Microcontamination Control (“MC”), Advanced Materials Handling (“AMH”), and Advanced Planarization Solutions (“APS”) for each was as follows:

(In thousands)	SCEM	MC	AMH	APS	Total
December 31, 2021	$ 470,875	$ 248,725	$ 74,102	$ —	$ 793,702
Addition due to acquisitions	275,771	—	—	3,357,367	3,633,138
Purchase accounting adjustments	5	—	—	—	5
Goodwill reallocation	(120,980)	—	—	120,980	—
Foreign currency translation	(1,863)	(8,667)	—	(11,023)	(21,553)
October 1, 2022	$ 623,808	$ 240,058	$ 74,102	$ 3,467,324	$ 4,405,292

Our goodwill balances reflect the goodwill reallocation related to the creation of our new APS segment during the third quarter of 2022, which included a transfer of some related operations in our SCEM reportable segment to our APS reportable segment. We have allocated goodwill to our reporting units using a relative fair value approach. In addition, we completed an assessment of any potential goodwill impairment for all reporting units immediately prior and subsequent to the reallocation and determined that no impairment existed.

Identifiable intangible assets at October 1, 2022 and December 31, 2021 consist of the following:

	October 1, 2022		
(In thousands)	Gross carrying amount	Accumulated amortization	Net carrying value
Developed technology	$ 1,298,717	$ 281,407	$ 1,017,310
Trademarks and trade names	267,718	25,680	242,038
Customer relationships	926,425	260,268	666,157
Other	62,006	17,782	44,224
	$ 2,554,866	$ 585,137	$ 1,969,729

	December 31, 2021		
(In thousands)	Gross carrying amount	Accumulated amortization	Net carrying value
Developed technology	$ 293,982	$ 232,722	$ 61,260
Trademarks and trade names	33,553	20,340	13,213
Customer relationships	481,674	227,350	254,324
Other	20,505	14,189	6,316
	$ 829,714	$ 494,601	$ 335,113

Future amortization expense relating to intangible assets currently recorded in the Company's condensed consolidated balance sheets is estimated to be the following at October 1, 2022:

(In thousands)	Remaining 2022	2023	2024	2025	2026	Thereafter	Total
Future amortization expense	$ 65,728	258,598	239,039	232,754	230,526	943,084	$ 1,969,729

7. DEBT

The Company's debt as of October 1, 2022 and December 31, 2021 consists of the following:

(In thousands)	October 1, 2022	December 31, 2021
Senior secured term loan facility due 2029	2,495,000	—
Senior secured notes due 2029	1,600,000	—
Senior unsecured notes due 2030	895,000	—
Senior unsecured notes due 2029	400,000	400,000
Senior unsecured notes due 2028	400,000	400,000
Bridge credit facility due 2023	205,000	—
Senior secured term loan facility due 2025	—	145,000
	5,995,000	945,000
Unamortized discount and debt issuance costs	147,515	7,973
Total debt, net	$ 5,847,485	$ 937,027
Less short-term debt, including current portion of long-term debt	219,787	—
Total long-term debt, net	$ 5,627,698	$ 937,027

Annual maturities of long-term debt, excluding unamortized discount and issuance costs, due as of October 1, 2022 are as follows:

(In thousands)	Remaining 2022	2023	2024	2025	2026	Thereafter	Total
Contractual debt obligation maturities*	$ —	229,950	24,950	24,950	24,950	5,690,200	$ 5,995,000

*Subject to Excess Cash Flow payments to the lenders.

CMC Materials Acquisition Financing

On the Closing Date, the Company completed its acquisition of CMC Materials pursuant to the Merger Agreement, by and among the Company, CMC Materials and Yosemite Merger Sub, Inc., a Delaware corporation and wholly owned subsidiary of the Company ("Merger Sub"). Pursuant to the Merger Agreement, Merger Sub merged with and into CMC Materials, with CMC Materials surviving the Merger and becoming a wholly-owned subsidiary of the Company.

On the Closing Date, the Company and certain of its subsidiaries entered into an Amendment and Restatement Agreement (the "Amendment"), which amended and restated the Credit and Guaranty Agreement, dated as of November 6, 2018 (as previously amended, restated, amended and restated, supplemented, modified and otherwise in effect prior to the effectiveness of the Amendment, the "Existing Credit Agreement" and, the Existing Credit Agreement as amended by the Amendment, the "Amended Credit Agreement"), by and among the Company, as borrower, certain subsidiaries of the Company party thereto, as guarantors, the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent and collateral agent.

The Amended Credit Agreement provides for senior secured credit facilities in an aggregate principal amount equal to $3.1 billion, consisting of (a) a senior secured term loan credit facility in an aggregate principal amount equal to $2.495 billion (the “Initial Term Loan Facility”) and (b) a senior secured revolving credit facility in an aggregate amount equal to $575.0 million (the “Revolving Facility” and, together with the Initial Term Loan Facility, the “Credit Facilities”). The Revolving Facility contains sublimits for swingline loans and the issuances of letters of credit. The Company used a portion of the proceeds of the offering to repay the remaining principal amount of the $145.0 million senior secured term loan facility due 2025. In connection with the repayment of this debt, the Company incurred a loss on extinguishment of debt of $0.9 million, which is included in Other expense (income), net on the condensed consolidated statement of operations.

The commitments under the Revolving Facility expire on July 6, 2027, and any loans then outstanding will be payable in full at that time. All outstanding loans under Initial Term Loan Facility are due and payable on July 6, 2029.

The obligations under the Credit Facilities are guaranteed by certain of the Company’s wholly-owned domestic restricted subsidiaries (collectively, the “Subsidiary Guarantors”), subject to customary exceptions and limitations. The obligations under the Credit Facility are secured by a first-priority lien on substantially all of the assets of the Company and the Subsidiary Guarantors, subject to customary exceptions and limitations, on a pari passu basis with the obligations under the Secured Notes, pursuant to customary intercreditor arrangements.

Borrowings under the Initial Term Loan Facility bear interest at a rate per annum equal to, at the Company’s option, either (i) Term Secured Overnight Financing Rate (“Term SOFR”) plus an applicable margin of 3.00% or (ii) a base rate plus an applicable margin of 2.00%. Borrowings under the Revolving Facility bear interest at a rate per annum equal to, at the Company’s option, either (i) Term SOFR, in the case of US dollar denominated borrowings, or the applicable benchmark rate as further described in the Amended Credit Agreement, in the case of any other currency, in each case, plus an applicable margin of 1.75% or (ii) a base rate, plus an applicable margin of 0.75%. The applicable margin set forth in the Amended Credit Agreement steps-down depending on the First Lien Net Leverage Ratio. The Amended Credit Agreement also contains customary unused commitment fees, letter of credit fees and agency fees.

The Amended Credit Agreement contains customary representations, warranties and affirmative covenants. The Amended Credit Agreement also includes negative covenants that limit, among other things, incurring additional indebtedness, transactions with affiliates, additional liens, sales of assets, dividends, investments and advances, prepayments of debt and mergers and acquisitions, in each case, subject to certain exceptions, qualifications and baskets. The Amended Credit Agreement also includes a “springing” financial covenant that would require the Company to maintain a First Lien Net Leverage Ratio of 5.20:1.00 or less as of the end of any period of four fiscal quarters ending after December 31, 2022 if at any time the Company has revolving borrowings, unreimbursed letter of credit drawings and undrawn letters of credit (subject to certain exceptions) outstanding in an amount in excess of 35.0% of the aggregate commitments in respect of the Revolving Facility.

The Amended Credit Agreement contains customary events of default for facilities of this type. If an event of default occurs and is continuing, the Company may be required immediately to repay all amounts outstanding under the Amended Credit Agreement.

On the Closing Date, the Company and the Subsidiary Guarantors entered into a 364-Day Bridge Credit and Guaranty Agreement (the “Bridge Credit Agreement”), among the Company, as borrower, certain subsidiaries of the Company party thereto, as guarantors, the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent. The Bridge Credit Agreement provides for a senior unsecured term loan facility in an aggregate principal amount equal to $275.0 million (the “Bridge Credit Facility”). All outstanding loans under the Bridge Credit Facility are due and payable on the date that is 364 days after the Closing Date. The Company incurred debt issuance costs of $6.9 million in connection with the Bridge Credit Facility.

Borrowings under the Bridge Credit Facility bear interest at a rate per annum equal to, at the Company’s option, either (i) Term SOFR plus an applicable margin of 4.55% or (ii) a base rate plus an applicable margin of 3.55%. In addition to paying interest on the outstanding principal under the Bridge Credit Facility, the Company will pay to each lender under the Bridge Credit Agreement duration fees equal to 0.25% of the aggregate outstanding principal amount of such lender’s loans under the Bridge Credit Facility at 90, 180 and 270 days after the Closing Date.

The Company’s obligations under the Bridge Credit Facility are guaranteed, on an unsecured basis, by the Subsidiary Guarantors, subject to customary exceptions and limitations. The Bridge Credit Agreement contains customary representations, warranties and affirmative covenants. The Bridge Credit Agreement also includes negative covenants that limit, among other things, additional subsidiary indebtedness, additional liens, sales of assets and mergers and acquisitions, in each case, subject to certain exceptions, qualifications and baskets.

The Bridge Credit Agreement contains customary events of default, including, but not limited to, payment defaults, breaches of representations and warranties, covenant defaults, events of bankruptcy and insolvency, and a change of control. If an event of default occurs and is continuing, the Company may be required immediately to repay all amounts outstanding under the Bridge Credit Agreement.

The Company began incurring ticking fees associated with the Initial Term Loan Facility on March 2, 2022 through the Closing Date. The ticking fees were paid in cash to the term loan lenders on the Closing Date. For the three and nine months ended October 1, 2022, the Company incurred $0.4 million and $12.0 million in ticking fees, respectively, which were recorded to interest expense in the condensed consolidated statement of operations.

Senior Secured Notes Due 2029 and Senior Unsecured Notes Due 2030

On April 14, 2022, the Company, via a wholly-owned escrow subsidiary (the “Escrow Issuer”), issued $1.6 billion aggregate principal amount of 4.750% senior secured notes due April 15, 2029 (the “2029 Notes”) pursuant to an indenture dated as of April 14, 2022 (the “2029 Notes Indenture”), by and between the Escrow Issuer and Truist Bank (“Truist”), as trustee and as notes collateral agent. Interest on the 2029 Notes is payable semi-annually in arrears on April 15 and October 15 of each year, commencing on October 15, 2022. The Company incurred debt issuance costs of $28.5 million in connection with the 2029 Notes. These costs are reported in the Company’s condensed consolidated balance sheet as a direct deduction from the face amount of the 2029 Notes, along with $7.6 million of original issue discount costs.

On June 30, 2022, the Company, via the Escrow Issuer, issued $895.0 million aggregate principal amount of 5.950% senior unsecured notes due June 15, 2030 (the “2030 Notes” and together with the 2029 Notes, the “New Notes”) pursuant to an indenture, dated as of June 30, 2022 (the “2030 Notes Indenture” and together with the 2029 Notes Indenture, the “New Notes Indentures”), by and between the Escrow Issuer and Truist. Interest on the 2030 Notes is payable semi-annually in arrears on June 15 and December 15 of each year, commencing on June 15, 2022. The Company incurred debt issuance costs of $24.1 million in connection with the 2030 Notes. These costs are reported in the Company’s condensed consolidated balance sheet as a direct deduction from the face amount of the 2030 Notes along with $16.7 million of net original issue discount costs.

On the Closing Date, the Escrow Issuer merged with and into the Company and, in connection therewith, the Company executed a supplemental indenture to each New Notes Indenture and such Company subsidiaries agreed to guarantee the Company’s obligations under the New Notes.

Accordingly, each series of New Notes is guaranteed, jointly and severally, fully and unconditionally, on a senior basis, by the Company’s existing and future domestic subsidiaries, other than certain excluded subsidiaries, to the extent that such subsidiaries guarantee indebtedness under the Amended Credit Agreement or existing senior notes. In addition, the 2029 Notes and related guarantees are secured, subject to permitted liens and certain other exceptions, by first priority liens on substantially the same collateral that secures the obligations under the Amended Credit Agreement.

The Company may, at its option, redeem, at any time and from time to time prior to June 15, 2025, some or all of the 2029 Notes at 100% of the principal amount thereof plus the applicable “make-whole” premium as set forth in the 2029 Notes Indenture plus accrued and unpaid interest, if any, to, but excluding, the redemption date. On or after June 15, 2025, the Company may redeem some or all of the 2029 Notes at the applicable prices set forth in the 2029 Notes Indenture plus accrued and unpaid interest, if any, to, but excluding, the redemption date. In addition, the Company may redeem up to 40% of the principal amount of the 2029 Notes before June 15, 2025 with the net proceeds from one or more equity offerings at the applicable price set forth in the 2029 Notes Indenture, plus accrued and unpaid interest, if any, to, but excluding, the redemption date.

The Company may, at its option, redeem, at any time and from time to time prior to January 15, 2029 (the “Par Call Date”), some or all of the 2029 Notes at 100% of the principal amount thereof plus accrued and unpaid interest, if any, to the redemption date plus the applicable “make-whole premium” described in the 2029 Notes Indenture. On or after the Par Call Date, the 2029 Notes will be redeemable, at the Company’s option, in whole or in part, at a redemption price equal to 100% of the principal amount of the 2029 Notes to be redeemed plus accrued and unpaid interest, if any, to, but excluding, the redemption date.

Upon the occurrence of certain change of control events accompanied by certain ratings events, the Company will be required to offer to repurchase all of the outstanding principal amount of each series of New Notes at a purchase price of 101% of the principal amount thereof, plus accrued and unpaid interest, if any, to, but not including, the date of repurchase.

Each New Notes Indenture contains covenants that, among other things, limit the Company’s ability and/or the ability of the Company’s subsidiaries to: incur liens; engage in sales-and-leaseback transactions; and consolidate, merge with or convey, transfer or lease all or substantially all of the Company’s and its subsidiaries’ assets to another person and limits the ability of any non-guarantor subsidiary of the Company to incur indebtedness. These covenants are subject to a number of other limitations and exceptions as set forth in the New Notes Indentures. The Company was in compliance with these covenants at October 1, 2022.

Each New Notes Indenture provides for customary events of default (subject in certain cases to customary grace and cure periods) which, if certain of them occur, would permit the trustee or the holders of at least 25% in aggregate principal amount of the then-outstanding applicable series of New Notes to declare the principal of, and interest or premium, if any, and any other monetary obligations on, all the then-outstanding series of New Notes to be due and payable immediately.

8. FAIR VALUE OF FINANCIAL INSTRUMENTS

The Company is required to record certain assets and liabilities at fair value. The valuation methods used for determining the fair value of these financial instruments by hierarchy are as follows:

Level 1 Cash and cash equivalents consist of various bank accounts used to support our operations and investments in institutional money-market funds that are traded in active markets. The restricted cash represents cash held in a “Rabbi” trust, further described in Note 4.

Level 2 Derivative financial instruments include an interest rate swap contract and foreign exchange contracts. The fair value of our derivative instruments is estimated using standard valuation models and market-based observable inputs over the contractual term, including the prevailing SOFR based yield curves for the interest rate swap, and forward rates and/or the Overnight Index Swap curve for forward foreign exchange contracts, among others.

Level 3 No Level 3 financial instruments

The following table presents financial instruments, other than debt, that we measure at fair value on a recurring basis. There were no outstanding balances for these items at December 31, 2021. See Note 1 of this Report on Form 10-Q for a discussion of our debt. In instances where the inputs used to measure the fair value of an asset fall into more than one level of the hierarchy, we have classified it based on the lowest level input that is significant to the determination of the fair value.

	October 1, 2022			
(In thousands):	Level 1	Level 2	Level 3	Total
Assets:				
Cash and cash equivalents	$ 752,787	$ —	$ —	$ 752,787
Restricted cash	1,880	$ —	$ —	1,880
Derivative financial instruments - Interest rate swap - cash flow hedge	—	40,127	—	40,127
Total Assets	$ 754,667	$ 40,127	$ —	$ 794,794
Liabilities:				
Derivative financial instruments - Forward exchange contracts	$ —	$ 336	$ —	$ 336
Total Liabilities	$ —	$ 336	$ —	$ 336

9. DERIVATIVE INSTRUMENTS

The Company is exposed to various market risks, including risks associated with interest rates and foreign currency exchange rates. One objective of the Company's risk management program is to mitigate these risks using derivative instruments.

Cash Flow Hedges - Interest Rate Swap Contract

In July 2022, the Company entered into a floating-to-fixed swap agreement on its variable rate debt under the Term Loan Facility. For further information on the Term Loan Facility, see Note 7 Debt. The interest rate swap was designated specifically to the Term Loan Facility and qualifies as a cash flow hedge. The notional amount is scheduled to decrease quarterly and will expire on December 30, 2025. As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income (loss) and will be reflected in earnings during the period the hedged transaction effects earnings, while the ineffective portion is recorded as a component of Interest expense.

Foreign Currency Contracts Not Designated as Hedges

The Company enters into foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. These foreign exchange contracts do not qualify for hedge accounting. The

Company recognizes the change in fair value of its foreign currency forward contracts in the condensed consolidated statement of operations.

The notional amounts of our derivative instruments are as follows:

(In thousands)	October 1, 2022	December 31, 2021
Derivatives designated as hedging instruments:		
Interest rate swap contract - Cash flow hedge	$ 1,950,000	$ —
Derivatives not designated as hedging instruments:		
Foreign exchange contracts to purchase U.S. dollars	$ 4,400	$ —
Foreign exchange contracts to sell U.S. dollars	23,175	—

The fair values of our derivative instruments included in the condensed consolidated balance sheets are as follows:

(In thousands)	Derivative Assets		Derivative Liabilities	
Condensed Consolidated Balance Sheet Location	October 1, 2022	December 31, 2021	October 1, 2022	December 31, 2021
Derivatives designated as hedging instruments - Interest rate swap contract -cash flow hedge				
Other current assets	$ 19,255	$ —	$ —	$ —
Other assets - long-term	20,773	—	—	—
Derivatives not designated as hedging instruments -Foreign exchange contracts				
Other current assets	$ 99	$ —	$ —	$ —
Other accrued liabilities	—	—	336	—

The following table summarizes the effects of our derivative instruments on our condensed consolidated statements of operations:

(In thousands)		Three Months Ended		Nine Months Ended	
Derivatives not designated as hedging instruments:	Condensed Consolidated Statements of Operations Location	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Foreign exchange contracts	Other expense, net	$ 562	$ —	$ 562	$ —

The following table summarizes the effects of our derivative instruments on Accumulated Other Comprehensive Income:

	Three Months Ended		Nine Months Ended	
(In thousands)	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Derivatives designated as hedging instruments:				
Interest rate swap contract - Cash flow hedge	$ 30,743	$ —	$ 30,743	$ —

We expect approximately $19.3 million to be reclassified from Accumulated other comprehensive income into Interest expense, net during the next twelve months related to our interest rate swap based on projected rates of the SOFR forward curve as of October 1, 2022.

10. (LOSS) EARNINGS PER COMMON SHARE

Basic (loss) earnings per common share (“EPS”) is calculated based on the weighted average number of shares of common stock outstanding during the applicable period. Diluted earnings per common share is calculated based on the weighted average number of shares of common stock outstanding plus potentially dilutive shares of common stock outstanding during the applicable period. The following table presents a reconciliation of the share amounts used in the computation of basic and diluted earnings per common share:

(In thousands)	Three months ended		Nine months ended	
	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Basic—weighted common shares outstanding	148,570	135,583	140,045	135,383
Weighted common shares assumed upon exercise of stock options and vesting of restricted common stock	—	1,048	847	1,173
Diluted—weighted common shares and common shares equivalent outstanding	148,570	136,631	140,892	136,556

The Company excluded the following shares underlying stock-based awards from the calculations of diluted EPS because their inclusion would have been anti-dilutive for the three and nine months ended October 1, 2022 and October 2, 2021:

(In thousands)	Three months ended		Nine months ended	
	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Shares excluded from calculations of diluted EPS	1,610	148	415	149

11.SHARE-BASED COMPENSATION

During the three months ended October 1, 2022, the Company modified certain awards of restricted share units, options, and performance-based restricted share units that were granted in the 2022 fiscal year to provide that the awards will generally vest in connection with the grantee's qualifying retirement. The Company accounted for this as a modification of awards and recognized incremental compensation cost of $15.3 million. The incremental compensation cost is measured as the accelerated expense over the requisite service period. The fair-value-based measure of the modified awards was the same as the fair-value based measure of the original award immediately before modification because the modification only affects the service period of the award.

In addition, the Company modified restricted share units, options, and performance-based restricted share units granted prior to the 2022 fiscal year for two employees to accelerate the unvested awards upon their respective retirements from the Company. The Company accounted for this as a modification of awards and recognized incremental compensation cost of $6.2 million. The incremental compensation cost is measured as the excess of the fair value of the modified award over the fair value of the original award immediately before its terms modified and recognized as compensation cost on the date of the modification for the vested awards.

12. OTHER EXPENSE, NET

Other expense, net for the three and nine months ended October 1, 2022 and October 2, 2021 consists of the following:

(In thousands)	Three months ended		Nine months ended	
	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Loss on foreign currency transactions	$ 13,631	$ 1,919	$ 28,254	$ 6,281
Loss on extinguishment of debt and modification	2,235	—	2,235	23,338
Other, net	(3,014)	(2)	(3,116)	188
Other expense, net	$ 12,852	$ 1,917	$ 27,373	$ 29,807

13. SEGMENT REPORTING

Effective July 6, 2022, coincident to and in conjunction with the CMC acquisition (see Note 3 to the condensed consolidated financial statements) the Company changed its financial segment reporting to reflect management and organizational changes made by the Company.

The Company's financial segment reporting reflects an organizational alignment intended to leverage the Company's unique breadth of capabilities to create mission-critical microcontamination control products, specialty chemicals and advanced materials handling solutions that maximize manufacturing yields, reduce manufacturing costs and enable higher device performance for its customers. While these segments have separate products and technical know-how, they share common business systems and processes, technology centers, and strategic and technology roadmaps. The Company leverages its expertise from these four segments to create new and increasingly integrated solutions for its customers. Beginning with this report, the Company will report its financial performance in the following segments:

- **Specialty Chemicals and Engineered Materials:** SCEM provides advanced materials enabling complex chip designs and improved device electrical performance, including high-performance and high-purity process chemistries, gases and materials and safe and efficient delivery systems to support semiconductor and other advanced manufacturing processes.
- **Microcontamination Control**: MC offers advanced filtration solutions that improve customers' yield, device reliability and cost, by filtering and purifying critical liquid chemistries and gases used in semiconductor manufacturing processes and other high-technology industries.
- **Advanced Materials Handling**: AMH develops solutions that improve customers' yields by protecting critical materials during manufacturing, transportation, and storage, including products that monitor, protect, transport and deliver critical liquid chemistries, wafers, and other substrates for a broad set of applications in the semiconductor, life sciences and other high-technology industries.
- **Advanced Planarization Solutions:** APS provides complementary chemical mechanical planarization solutions, advanced materials and high-purity wet chemicals, including CMP slurries, pads, formulated cleans and other electronic chemicals that are critical to semiconductor manufacturing processes and that enhance device yields.

Summarized financial information for the Company's reportable segments is shown in the following tables.

	Three months ended		Nine months ended	
(In thousands)	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Net sales				
SCEM	$ 224,192	$ 154,605	$ 569,380	$ 460,707
MC	280,550	225,877	821,320	660,497
AMH	210,405	186,200	632,602	507,243
APS	293,854	21,775	352,816	62,580
Inter-segment elimination	(15,173)	(8,964)	(40,155)	(27,338)
Total net sales	$ 993,828	$ 579,493	$ 2,335,963	$ 1,663,689

	Three months ended		Nine months ended	
(In thousands)	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Segment profit				
SCEM	$ 34,228	$ 33,552	$ 107,459	$ 98,760
MC	105,335	78,399	304,062	227,097
AMH	42,077	40,503	135,693	114,691
APS	18,903	7,539	40,241	21,832
Total segment profit	$ 200,543	$ 159,993	$ 587,455	$ 462,380

The following table reconciles total segment profit to (loss) income before income tax (benefit) expense:

(In thousands)	Three months ended October 1, 2022	Three months ended October 2, 2021	Nine months ended October 1, 2022	Nine months ended October 2, 2021
Total segment profit	$ 200,543	$ 159,993	$ 587,455	$ 462,380
Less:				
Amortization of intangible assets	65,346	11,843	90,491	35,616
Unallocated general and administrative expenses	120,308	8,793	160,759	34,540
Operating income	14,889	139,357	336,205	392,224
Interest expense	84,150	9,395	129,027	31,744
Interest income	(1,395)	(56)	(2,065)	(181)
Other expense, net	12,852	1,917	27,373	29,807
(Loss) income before income tax (benefit) expense	$ (80,718)	$ 128,101	$ 181,870	$ 330,854

In the following tables, revenue is disaggregated by customers' country or region based on the ship to location of the customer for the three and nine months ended October 1, 2022 and October 2, 2021, respectively.

(In thousands)	Three months ended October 1, 2022					
	SCEM	MC	AMH	APS	Inter-segment	Total
North America	$ 86,259	$ 42,716	$ 67,794	$ 69,618	$ (15,173)	$ 251,214
Taiwan	29,462	70,536	38,712	43,604	—	182,314
China	26,805	58,398	28,717	53,040	—	166,960
South Korea	19,931	30,583	29,339	40,001	—	119,854
Japan	22,563	42,505	16,336	9,604	—	91,008
Europe	21,892	20,977	18,401	41,483	—	102,753
Southeast Asia	17,280	14,835	11,106	36,504	—	79,725
	$ 224,192	$ 280,550	$ 210,405	$ 293,854	$ (15,173)	$ 993,828

(In thousands)	Three months ended October 2, 2021					
	SCEM	MC	AMH	APS	Inter-segment	Total
North America	$ 47,636	$ 35,828	$ 60,350	$ 4,915	$ (8,964)	$ 139,765
Taiwan	24,479	57,806	26,615	4,892	—	113,792
China	21,678	35,003	23,975	3,639	—	84,295
South Korea	18,319	24,763	28,487	5,336	—	76,905
Japan	20,735	42,440	13,701	904	—	77,780
Europe	11,952	17,583	26,041	1,299	—	56,875
Southeast Asia	9,806	12,454	7,031	790	—	30,081
	$ 154,605	$ 225,877	$ 186,200	$ 21,775	$ (8,964)	$ 579,493

	Nine months ended October 1, 2022					
(In thousands)	SCEM	MC	AMH	APS	Inter-segment	Total
North America	$ 191,394	$ 113,984	$ 205,414	$ 82,554	$ (40,155)	$ 553,191
Taiwan	85,040	232,711	111,722	54,338	—	483,811
China	77,799	142,639	87,347	61,385	—	369,170
South Korea	56,793	93,718	89,367	52,382	—	292,260
Japan	65,659	137,103	44,701	11,202	—	258,665
Europe	46,499	60,670	65,976	45,986	—	219,131
Southeast Asia	46,196	40,495	28,075	44,969	—	159,735
	$ 569,380	$ 821,320	$ 632,602	$ 352,816	$ (40,155)	$ 2,335,963

	Nine months ended October 2, 2021					
(In thousands)	SCEM	MC	AMH	APS	Inter-segment	Total
North America	$ 142,994	$ 106,568	$ 161,792	$ 13,295	$ (27,338)	$ 397,311
Taiwan	69,196	155,830	79,286	16,154	—	320,466
China	63,442	118,595	70,418	7,756	—	260,211
South Korea	58,266	83,725	73,769	15,627	—	231,387
Japan	66,258	114,654	37,875	2,520	—	221,307
Europe	32,025	44,562	63,171	4,276	—	144,034
Southeast Asia	28,526	36,563	20,932	2,952	—	88,973
	$ 460,707	$ 660,497	$ 507,243	$ 62,580	$ (27,338)	$ 1,663,689

14. SUBSEQUENT EVENT

On October 11, 2022, the Company announced a definitive agreement for Infineum USA L.P. to acquire the Pipeline and Industrial Materials (“PIM”) business, which became part of the Company with the recent acquisition of CMC Materials. The selling price is expected to be approximately $240.0 million, subject to customary purchase price adjustments. The sale is currently expected to close in the fourth quarter of 2022, subject to the satisfaction of certain customary closing conditions, including, among others, receipt of regulatory approval. The Company does not expect a material gain or loss from the sale of the PIM business.

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of the Company’s condensed consolidated financial condition and results of operations should be read along with the condensed consolidated financial statements and the accompanying notes thereto included elsewhere in this Quarterly Report on Form 10-Q. The information, except for historical information, contained in this discussion and analysis or set forth elsewhere in this Quarterly Report on Form 10-Q includes forward-looking statements that involve risks and uncertainties. You should review the section entitled “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021 as well as in our other SEC filings for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis or set forth elsewhere in this Quarterly Report on Form 10-Q. The Company assumes no obligation to publicly release the results of any revision or updates to these forward-looking statements to reflect future events or unanticipated occurrences.

Overview

The Company is a leading supplier of advanced materials and process solutions for the semiconductor and other high-technology industries. Our mission is to help our customers improve their productivity, performance and technology by providing solutions for the most advanced manufacturing environments. We leverage our unique breadth of capabilities to create mission-critical microcontamination control products, specialty chemicals and advanced materials handling solutions that maximize manufacturing yields, reduce manufacturing costs and enable higher device performance for our customers.

Our customized materials solutions enable the highest levels of performance essential to the manufacture of semiconductors. As our customers introduce more complex architectures and search for new materials with better electrical and structural properties to improve the performance of their devices, they rely on Entegris as a trusted partner to address these challenges. We understand these challenges and have solutions to address them, such as our advanced deposition materials, implant gases, CMP slurries, CMP pads, formulated cleaning chemistries and selective etch chemistries. Our customers also require greater end-to-end materials purity and integrity in their manufacturing processes that, when combined with smaller dimensions and more complex architectures, can be challenging to achieve. To enable the use of new metals and the further miniaturization of chips, and to maximize yield and increase long-term device reliability, we provide products such as our advanced liquid and gas filtration and purification products that help to selectively remove new classes of contaminants throughout the semiconductor supply chain. In addition, to ensure purity levels are maintained across the entire supply chain, from bulk manufacturing, to transportation to and delivery through a fabrication plant, to application onto the wafer, we provide high-purity packaging and materials handling products.

As of the date of this Quarterly Report on Form 10-Q, our business is organized and operated in four operating segments, which align with the key elements of the advanced semiconductor manufacturing ecosystem. The Specialty Chemicals and Engineered Materials segment, or SCEM, provides advanced materials enabling complex chip designs and improved device electrical performance, including high-performance and high-purity process chemistries, gases and materials and safe and efficient delivery systems to support semiconductor and other advanced manufacturing processes. The Microcontamination Control segment, or MC, offers advanced filtration solutions that improve customers’ yield, device reliability and cost, by filtering and purifying critical liquid chemistries and gases used in semiconductor manufacturing processes and other high-technology industries.The Advanced Materials Handling segment, or AMH, develops solutions that improve customers’ yields by protecting critical materials during manufacturing, transportation, and storage, including products that monitor, protect, transport and deliver critical liquid chemistries, wafers, and other substrates for a broad set of applications in the semiconductor, life sciences and other high-technology industries. The Advanced Planarization Solutions segment, or APS, provides complementary chemical mechanical planarization solutions, advanced materials and high-purity wet chemicals; including CMP slurries, pads, formulated cleans and other electronic chemicals that are critical to semiconductor manufacturing processes and that enhance device yields. While these segments have separate products and technical know-how, they share common business systems and processes, technology centers and strategic and technology roadmaps. With the technology, capabilities and complementary product portfolios from these segments, we believe we are uniquely positioned to collaborate across segments to create new, co-optimized and increasingly integrated solutions for our customers. We believe that our recent acquisition of CMC Materials and the inclusion of CMP slurries, pads and formulated cleans to our product portfolio will further support our strategy of collaboration between segments and the development of new and co-optimized solutions. See Note 13 to the condensed consolidated financial statements for additional information on the Company’s four segments.

The Company’s fiscal year is the calendar period ending each December 31. The Company’s fiscal quarters consist of 13-week or 14-week periods that end on a Saturday. The Company’s fiscal quarters in 2022 end on April 2, 2022, July 2, 2022, October 1, 2022 and December 31, 2022.

Key operating factors Key factors that management believes have the largest impact on the overall results of operations of the Company include:

- ***Level of sales*** Since a significant portion of the Company’s product costs (except for raw materials, purchased components and direct labor) are largely fixed in the short-to-medium term, an increase or decrease in sales affects gross profits and overall profitability significantly. Also, increases or decreases in sales and operating profitability affect certain costs such as incentive compensation and commissions, which are highly variable in nature. The Company's sales are subject to the effects of industry cyclicality, technological change, substantial competition, pricing pressures and foreign currency fluctuations.

- ***Variable margin on sales*** The Company's variable margin on sales is determined by selling prices and the costs of manufacturing and raw materials. This is affected by a number of factors, which include the Company's sales mix, purchase prices of raw materials (especially polymers, membranes, stainless steel and purchased components), foreign currency fluctuations, domestic and international competition, direct labor costs and the efficiency of the Company's production operations, among others.
- ***Fixed cost structure*** The Company's operations include a number of large fixed or semi-fixed cost components, which include salaries, indirect labor and benefits, facility costs, lease expenses and depreciation and amortization. It is not possible to vary these costs easily in the short-term as volumes fluctuate. Accordingly, increases or decreases in sales volume can have a large effect on the usage and productivity of these cost components, resulting in a large impact on the Company's profitability.

Impact of COVID-19 on our Business

The COVID-19 pandemic continues to impact the global economy. Infection rates vary across the countries in which we operate, and governmental authorities have continued to implement numerous and constantly evolving measures to try to contain the virus. Continuing impacts of the pandemic include a more challenging supply chain and global logistics environment. While we have experienced instances of raw material constraints, higher freight costs and delivery delays in both inbound shipments of raw materials and outgoing shipments of finished products to customers, we have not experienced significant adverse impacts to our global operations. See Item 1A, "Risk Factors," in our Annual Report on Form 10-K for the year ended December 31, 2021 for additional information regarding risks associated with the COVID-19 pandemic, including under the caption "The COVID-19 pandemic and ensuing governmental responses could materially adversely affect our financial condition and results of operations."

Impact of Conflict Between Russia and Ukraine

The military conflict between Russia and Ukraine and the sanctions imposed by the United States and other governments in response to this conflict have caused significant volatility and disruptions to global markets. We source a few raw materials from Russia and Ukraine, and we have been able to obtain an adequate supply of these materials to serve our customers, albeit at increased cost. We are proactively assessing and evaluating alternative sources to bolster our supply of these materials moving forward, in addition to working closely with our customers on any product re-qualification that may be required. Revenue relating to products manufactured from raw materials sourced from this region does not constitute a material portion of our business and historically we have not had significant revenue in this region. The ultimate impact of the conflict on the global economy, supply chains, logistics, fuel prices, raw material pricing and our business remains uncertain. We cannot currently predict the ultimate impact of the conflict on our financial condition, results of operations or cash flows. Refer to Part II, Item 1A. "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended April 2, 2022 for more information.

Impact of New Export Control Regulations

On October 7, 2022, the U.S Department of Commerce, Bureau of Industry and Security ("BIS") announced new export control regulations that restrict the sale of certain products and services to some companies and domestic fabs in China. Since these rules were published, we have assembled a global, cross-functional team to interpret the regulations, analyze how they may impact Entegris and determine how to best serve our customers going forward in compliance with these rules. At a high-level, these new rules restrict the sale of products and the provision of service to domestic fabs in China operating at or above certain advanced technology nodes. We currently estimate that the new regulations will reduce our fourth-quarter nets sales by approximately $40 to 50 million. We intend to apply for export licenses where appropriate.

Recent Events

On the Closing Date, we completed the acquisition of CMC Materials. We acquired all of the issued and outstanding common shares of CMC Materials for $133.00 in cash and 0.4506 shares of our common stock per share, representing a total purchase price (inclusive of debt retired and cash assumed) at close was $6.0 billion (based on our closing price on June 30, 2022), including $3.8 billion in cash paid to CMC Materials' shareholders, the issuance of 12.9 million shares of our common stock (excluding unvested CMC stock options and unvested CMC restricted stock units, restricted shares and performance share units equity awards assumed), $0.9 billion of debt retired and approximately $0.3 billion of acquired cash. We financed the cash portion of the purchase price through debt financing. See Note 7 to our condensed consolidated financial statements for further discussion of the debt financing that occurred prior to and on the Closing Date of the acquisition.

During the three months ended October 1, 2022, the Company realigned its financial reporting structure reflecting management and organizational changes. Beginning with this report, the Company will report its financial performance based on four reportable segments: Specialty Chemicals and Engineered Materials, Microcontamination Control, Advanced Material Handling and Advanced Planarization Solutions. See note 13 to the condensed consolidated financial statements for additional information on the Company's four segments

On July 28, 2022, we entered into an interest rate swap agreement. The interest rate swap is a floating-to-fixed interest rate swap contract to hedge the variability in SOFR-based interest payments associated with $1.95 billion of our $2.495 billion Initial Term Loan Facility. The notional amount is scheduled to decrease quarterly and will expire on December 30, 2025. See Note 9 to our condensed consolidated financial statements for further discussion.

On August 16, 2022, the U.S. government enacted the Inflation Reduction Act of 2022 ("IRA") that includes, among other provisions, changes to the U.S. corporate income tax system, including a 15% minimum tax based on "adjusted financial statement income" exceeding $1 billion and a 1% excise tax on net repurchases of stock after December 31, 2022, as well as tax credits for clean energy initiatives. We are evaluating the IRA and its requirements, as well as any potential impact on our business.

Critical Accounting Policies and Estimates

Management's discussion and analysis of financial condition and results of operations are based upon the Company's condensed consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these condensed consolidated financial statements requires the Company to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions.

The critical accounting policies affected most significantly by estimates, assumptions and judgments used in the preparation of the Company's condensed consolidated financial statements are described in Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Securities and Exchange Commission on February 4, 2022. On an ongoing basis, the Company evaluates the critical accounting policies used to prepare its condensed consolidated financial statements, including, but not limited to, those related to business acquisitions. There have been no material changes in these critical accounting policies and estimates.

Three and Nine Months Ended October 1, 2022 Compared to Three and Nine Months Ended October 2, 2021

The following table compares operating results for the three and nine months ended October 1, 2022 and October 2, 2021, both in dollars and as a percentage of net sales, for each caption.

	Three months ended				Nine months ended			
(Dollars in thousands)	October 1, 2022		October 2, 2021		October 1, 2022		October 2, 2021	
Net sales	$ 993,828	100.0 %	$ 579,493	100.0 %	$ 2,335,963	100.0 %	$ 1,663,689	100.0 %
Cost of sales	622,157	62.6	315,289	54.4	1,344,075	57.5	899,115	54.0
Gross profit	371,671	37.4	264,204	45.6	991,888	42.5	764,574	46.0
Selling, general and administrative expenses	226,446	22.8	71,032	12.3	404,239	17.3	215,042	12.9
Engineering, research and development expenses	64,990	6.5	41,972	7.2	160,953	6.9	121,692	7.3
Amortization of intangible assets	65,346	6.6	11,843	2.0	90,491	3.9	35,616	2.1
Operating income	14,889	1.5	139,357	24.0	336,205	14.4	392,224	23.6
Interest expense	84,150	8.5	9,395	1.6	129,027	5.5	31,744	1.9
Interest income	(1,395)	(0.1)	(56)	—	(2,065)	(0.1)	(181)	—
Other expense, net	12,852	1.3	1,917	0.3	27,373	1.2	29,807	1.8
(Loss) income before income taxes	(80,718)	(8.1)	128,101	22.1	181,870	7.8	330,854	19.9
Income tax (benefit) expense	(7,015)	(0.7)	10,640	1.8	30,377	1.3	39,947	2.4
Net (loss) income	$ (73,703)	(7.4)%	$ 117,461	20.3 %	$ 151,493	6.5 %	$ 290,907	17.5 %

Net sales For the three months ended October 1, 2022, net sales increased by 71% to $993.8 million, compared to $579.5 million for the three months ended October 2, 2021. An analysis of the factors underlying the increase in net sales is presented in the following table:

(In thousands)		
Net sales in the quarter ended October 2, 2021	$	579,493
Increase mainly associated with volume exclusive of CMC Materials		136,693
Increase associated with acquired businesses		315,405
Decrease associated with effect of foreign currency translation		(37,763)
Net sales in the quarter ended October 1, 2022	$	993,828

Total net sales increased primarily driven by the inclusion of sales from the acquisition of CMC Materials for the three-month period subsequent to the Closing Date. Growth was also driven in our unit driven solutions, including liquid filtration, formulated cleans and advanced deposition materials, which are of growing importance to our customers' technology. Growth was also strong in many of our CAPEX driven solutions, which are linked to new investments in additional fab capacity. Total net sales also reflected unfavorable foreign currency translation effects of $37.8 million, mainly due to the significant weakening of the Japanese yen and the Korean won relative to the U.S. dollar.

On a geographic basis, sales percentage by customers' country or region for the three months ended October 1, 2022 and October 2, 2021 and the percentage increase in sales for the three months ended October 1, 2022 compared to the sales for the three months ended October 2, 2021 were as follows:

	Three months ended		
	October 1, 2022	October 2, 2021	Percentage increase in sales
North America	25 %	24 %	80 %
Taiwan	18 %	20 %	60 %
China	17 %	15 %	98 %
South Korea	12 %	13 %	56 %
Japan	9 %	13 %	17 %
Europe	10 %	10 %	81 %
Southeast Asia	8 %	5 %	165 %

The increases in sales to customers for all countries and regions in the table above were principally driven by the inclusion of sales from the CMC Materials acquisition.

Net sales for the nine months ended October 1, 2022 were $2,336.0 million, up 40% from $1,663.7 million in the comparable year-ago period. An analysis of the factors underlying the increase in net sales is presented in the following table:

(In thousands)		
Net sales in the nine months ended October 2, 2021	$	1,663,689
Increase mainly associated with volume exclusive of CMC Materials		415,130
Decrease associated with effect of foreign currency translation		(67,792)
Increase associated with acquired businesses		324,936
Net sales in the nine months ended October 1, 2022	$	2,335,963

Total net sales increased primarily driven by the inclusion of sales from the acquisition of CMC Materials for the three-month period subsequent to the Closing Date and the Company's strong sales growth across all four segments, as we benefited from robust industry conditions and record demand for our products and solutions. Total net sales also reflected unfavorable foreign currency translation effects of $67.8 million, mainly due to the significant weakening of the Japanese yen and the Korean Won relative to the U.S. dollar.

On a geographic basis, sales percentage by customers' country or region for the nine months ended October 1, 2022 and October 2, 2021 and the percentage increase in sales for the nine months ended October 1, 2022 compared to the sales for the nine months ended October 2, 2021 were as follows:

	Nine months ended		
	October 1, 2022	October 2, 2021	Percentage increase in sales
North America	24 %	24 %	39 %
Taiwan	21 %	19 %	51 %
South Korea	13 %	14 %	26 %
Japan	11 %	13 %	17 %
China	16 %	16 %	42 %
Europe	9 %	9 %	52 %
Southeast Asia	7 %	5 %	80 %

The increases in sales to customers for all countries and regions in the table above were principally driven by the inclusion of sales from the CMC Materials acquisition and a general increase in demand for products.

Gross margin The following table sets forth gross margin as a percentage of net revenues:

	Three months ended			Nine months ended		
	October 1, 2022	October 2, 2021	Percentage point change	October 1, 2022	October 2, 2021	Percentage point change
Gross margin as a percentage of net revenues:	37.4 %	45.6 %	(8.2)	42.5 %	46.0 %	(3.5)

Gross margin decreased by 8.2 percentage points for the three months ended October 1, 2022, compared to the same period in the prior year. Gross margin declined primarily due to a $61.9 million charge or 6.2 percentage point change for fair value write-up of acquired CMC Materials inventory sold during the quarter and inclusion of CMC Materials products, which have aggregate lower gross margins.

For the nine months ended October 1, 2022, the Company’s gross margin decreased by 3.5 percentage points compared to the same period in the prior year. Gross margin declined primarily due to a $61.9 million charge or 2.6 percentage point change for fair value write-up of acquired CMC Materials inventory sold during the quarter and inclusion of CMC Materials products, which have aggregate lower gross margins.

Selling, general and administrative expenses Selling, general and administrative, or SG&A, expenses were $226.4 million in the three months ended October 1, 2022, compared to $71.0 million in the year-ago period. An analysis of the factors underlying the change in SG&A expenses is presented in the following table:

(In thousands)		
Selling, general and administrative expenses in the quarter ended October 2, 2021	$	71,032
SG&A expense recorded by CMC Materials and included in Company’s condensed financial statements after the date of the acquisition		36,223
Employee costs, exclusive of CMC Materials		2,452
Deal and transaction costs		31,867
Integration costs		19,472
Contractual and non-cash integration costs		58,411
Professional costs, exclusive of CMC Materials		1,589
Travel costs, exclusive of CMC Materials		1,617
Other increases, net, exclusive of CMC Materials		3,783
Selling, general and administrative expenses in the quarter ended October 1, 2022	$	226,446

SG&A expenses were $404.2 million for the first nine months of 2022, representing a 88% increase compared to SG&A expenses of $215.0 million in the year-ago period. An analysis of the factors underlying changes in SG&A is presented in the following table:

(In thousands)		
Selling, general and administrative expenses in the nine months ended October 2, 2021		215,042
SG&A expense recorded by CMC Materials and included in Company's condensed financial statements after the date of the acquisition		36,223
Employee costs, exclusive of CMC Materials		10,909
Deal and transaction costs		39,285
Integration costs		28,207
Contractual and non-cash integration costs		58,411
Absence of gain on sale of non-core intangibles occurred in the year-ago period, exclusive of CMC Materials		5,100
Professional costs, exclusive of CMC Materials		2,488
Travel costs, exclusive of CMC Materials		3,121
Other increases, net, exclusive of CMC Materials		5,453
Selling, general and administrative expenses in the nine months ended October 1, 2022	$	404,239

Engineering, research and development expenses The Company's engineering, research and development, or ER&D, efforts focus on the support or extension of current product lines and the development of new products and manufacturing technologies. ER&D expenses increased 55% to $65.0 million in the three months ended October 1, 2022 compared to $42.0 million in the year-ago period. An analysis of the factors underlying the increase in ER&D expenses is presented in the following table:

(In thousands)		
Engineering, research and development expenses in the quarter ended October 2, 2021	$	41,972
ER&D expense recorded by CMC Materials and included in Company's condensed financial statements after the date of the acquisition		12,897
Employee costs, exclusive of CMC Materials		5,356
Project materials, exclusive of CMC Materials		2,546
Other increases, net		2,219
Engineering, research and development expenses in the quarter ended October 1, 2022	$	64,990

ER&D expenses increased 32% to $161.0 million in the first nine months of 2022, compared to $121.7 million in the year-ago period. An analysis of the factors underlying the increase in ER&D expenses is presented in the following table:

(In thousands)		
Engineering, research and development expenses in the nine months ended October 2, 2021	$	121,692
ER&D expense recorded by CMC Materials and included in Company's condensed financial statements after the date of the acquisition		12,897
Employee costs, exclusive of CMC Materials		14,734
Project materials, exclusive of CMC Materials		7,353
Other increases, net		4,277
Engineering, research and development expenses in the nine months ended October 1, 2022	$	160,953

Amortization expenses Amortization of intangible assets was $65.3 million in the three months ended October 1, 2022, compared to $11.8 million for the three months ended October 2, 2021. The increase primarily reflects additional amortization expense associated with the recent acquisition of CMC Materials.

Amortization of intangible assets was $90.5 million in the nine months ended October 1, 2022, compared to $35.6 million for the nine months ended October 2, 2021. The increase primarily reflects the additional amortization expense associated with the recent acquisition of CMC Materials.

Interest expense Interest expense includes interest associated with debt outstanding and the amortization of debt issuance costs associated with such borrowings. Interest expense was $84.2 million in the three months ended October 1, 2022, compared to

$9.4 million in the three months ended October 2, 2021. The increase primarily reflects higher interest expense related to the debt financing of the CMC Materials acquisition.

Interest expense was $129.0 million in the nine months ended October 1, 2022, compared to $31.7 million in the nine months ended October 2, 2021. The increase primarily reflects higher interest expense related to the debt financing of the CMC Materials acquisition.

Other expense, net Other expense, net was $12.9 million in the three months ended October 1, 2022 and consisted mainly of foreign currency transaction losses of $13.6 million. Other expense, net was $1.9 million in the three months ended October 2, 2021 and consisted mainly of foreign currency transaction losses of $1.9 million.

Other expense, net was $27.4 million in the nine months ended October 1, 2022 and consisted mainly of foreign currency transaction losses of $28.3 million. Other expense, net was $29.8 million in the nine months ended October 2, 2021 and consisted mainly of a loss on extinguishment of debt of $23.1 million associated with the redemption of the Company’s $550 million aggregate principal amount of senior unsecured notes due 2026 and foreign currency transaction losses of $6.3 million.

Income tax (benefit) expense Income tax benefit of $7.0 million and income tax expense of $30.4 million in the three and nine months ended October 1, 2022, respectively, compared to income tax expense of $10.6 million and $39.9 million in the three and nine months ended October 2, 2021, respectively. The Company’s year-to-date effective income tax rate at October 1, 2022 was 16.7%, compared to 12.1% at October 2, 2021.

The increase in the year-to-date effective income tax rate from 2021 to 2022 primarily relates to a reduction in creditable foreign withholding taxes which was partially offset by certain acquisition related expenses that were recorded discretely in the period ended October 1, 2022. The effective tax rate for the nine months ended October 2, 2021 included the reversal of a valuation allowance on foreign tax credits generated during 2020 and 2021 of $6.2 million and the recognition of a capital loss tax benefit of $3.8 million. These tax benefits were offset in part by tax recorded on the sale of intangible property of $3.5 million. Additionally, the income tax expense for the nine months ended October 1, 2022 and October 2, 2021 includes discrete benefits of $4.3 million and $13.1 million, respectively, recorded in connection with share-based compensation.

Net (loss) income Due mainly to the fair value of inventory sold charge, transaction, deal and integrations costs related to the Merger as noted above, the Company recorded net loss of $73.7 million, or $0.50 per diluted share, in the three months ended October 1, 2022, compared to net income of $117.5 million, or $0.86 per diluted share, in the three months ended October 2, 2021.

In the nine months ended October 1, 2022, the Company recorded net income of $151.5 million, or $1.08 per diluted share, compared to net income of $290.9 million, or $2.13 per diluted share, in the nine months ended October 2, 2021.

Non-GAAP Financial Measures The Company’s condensed consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States, or GAAP. The Company also utilizes certain non-GAAP financial measures as a complement to financial measures provided in accordance with GAAP in order to better assess and reflect trends affecting the Company’s business and results of operations. See the section entitled “Non-GAAP Information” below for additional detail, including the definition of certain non-GAAP financial measures and the reconciliation of these non-GAAP measures to the Company’s GAAP measures.

The Company’s principal non-GAAP financial measures are adjusted EBITDA and adjusted operating income, together with related measures thereof, and non-GAAP earnings per share.

Adjusted EBITDA increased 70% to $298.4 million in the three months ended October 1, 2022, compared to $175.5 million in the three months ended October 2, 2021. In the three months ended October 1, 2022, adjusted EBITDA, as a percentage of net sales, decreased to 30.0% from 30.3% in the year-ago period.

Adjusted EBITDA increased 42% to $712.0 million in the nine months ended October 1, 2022, compared to $499.8 million in the nine months ended October 2, 2021. In the nine months ended October 1, 2022, adjusted EBITDA, as a percentage of net sales, increased to 30.5% from 30.0% in the year-ago period.

Adjusted operating income increased 66% to $253.2 million in the three months ended October 1, 2022, compared to $152.7 million in the three months ended October 2, 2021. Adjusted operating income, as a percentage of net sales, decreased to 25.5% from 26.3% in the year-ago period.

Adjusted operating income increased 43% to $618.5 million in the nine months ended October 1, 2022, compared to $432.3 million in the nine months ended October 2, 2021. In the nine months ended October 1, 2022, adjusted operating income, as a percentage of net sales, increased to 26.5% from 26.0% in the year-ago period.

Non-GAAP earnings per share decreased 8% to $0.85 in the three months ended October 1, 2022, compared to $0.92 in the three months ended October 2, 2021. Non-GAAP earnings per share increased 18% to $2.91 in the nine months ended October 1, 2022, compared to $2.47 in the nine months ended October 2, 2021.

The increases in adjusted EBITDA and adjusted operating income for the three and nine months ended October 1, 2022 compared to the year-ago periods are generally attributable to the increases in sales and gross profit. The decrease in non-GAAP earnings per share for the three and nine months ended October 1, 2022 compared to the year-ago period is attributable to higher interest expense associated withe debt financing in connection with the CMC Merger.

Segment Analysis

During the three months ended October 1, 2022, the Company realigned its financial reporting structure reflecting management and organizational changes. Beginning with this report, the Company will report its financial performance based on four reportable segments: Specialty Chemicals and Engineered Materials, Microcontamination Control, Advanced Material Handling and Advanced Planarization Solutions. See note 13 to the condensed consolidated financial statements for additional information on the Company's four segments. The following is a discussion of the results of operations of these four business segments.

The following table presents selected net sales and segment profit data for the Company's three reportable segments, along with unallocated general and administrative expenses, for the three and nine months ended October 1, 2022 and October 2, 2021.

	Three months ended		Nine months ended	
(In thousands)	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Specialty Chemicals and Engineered Materials				
Net sales	$ 224,192	$ 154,605	$ 569,380	$ 460,707
Segment profit	34,228	33,552	107,459	98,760
Microcontamination Control				
Net sales	$ 280,550	$ 225,877	$ 821,320	$ 660,497
Segment profit	105,335	78,399	304,062	227,097
Advanced Materials Handling				
Net sales	$ 210,405	$ 186,200	$ 632,602	$ 507,243
Segment profit	42,077	40,503	135,693	114,691
Advanced Planarization Solutions				
Net sales	$ 293,854	$ 21,775	$ 352,816	$ 62,580
Segment profit	18,903	7,539	40,241	21,832
Unallocated general and administrative expenses	$ 120,308	$ 8,793	$ 160,759	$ 34,540

Specialty Chemicals and Engineered Materials (SCEM)

For the third quarter of 2022, SCEM net sales increased to $224.2 million, up 45% compared to $154.6 million in the comparable period last year. The sales increase primarily reflects the inclusion of sales of $48.5 million from the inclusion of certain product lines from the acquisition of CMC Materials, while the remainder reflects modestly improved sales of advanced deposition materials, formulated cleans, selective etch and specialty coatings products. SCEM reported a segment profit of $34.2 million in the third quarter of 2022, up 2% from $33.6 million in the year-ago period. The segment profit increase was primarily associated with higher sales levels reflecting the sales of CMC Materials products and increased sales volume, partially offset by a 30% increase in operating expenses, primarily due to the expenses incurred by the inclusion of certain product lines of CMC Materials and a $5.1 million charge for a fair value write-up of acquired CMC Materials inventory sold.

For the nine months ended October 1, 2022, SCEM net sales increased to $569.4 million, up 24% compared to $460.7 million in the comparable period last year. The sales increase primarily reflects the inclusion of sales of $48.5 million from inclusion of certain product lines from the acquisition of CMC Materials, while the remainder reflects modestly improved sales of advanced deposition materials, formulated cleans, selective etch and specialty coatings products. SCEM reported a segment profit of $107.5 million in the nine months ended October 1, 2022, up 9% from $98.8 million in the year-ago period. The segment profit increase was primarily associated with higher sales level reflecting the sales of CMC Materials products and increased sales volume, partially offset by unfavorable foreign exchange effects, a 23% increase in operating expenses, primarily due to the expenses incurred by the inclusion of certain product lines of CMC Materials, a $5.1 million charge for a fair value write-up of acquired CMC Materials inventory sold and the absence of a gain on sale of non-core intangibles.

Microcontamination Control (MC)

For the third quarter of 2022, MC net sales increased to $280.6 million, up 24% compared to $225.9 million in the comparable period last year. The sales increase was mainly due to improved performance across substantially all product lines. MC reported a segment profit of $105.3 million in the third quarter of 2022, up 34% from $78.4 million in the year-ago period. The segment profit improvement was primarily due to higher gross profit related to increased sales volume, partially offset by a 23% increase in operating expenses primarily due to higher compensation costs.

For the nine months ended October 1, 2022, MC net sales increased to $821.3 million, up 24% compared to $660.5 million in the comparable period last year. The sales increase was mainly due to improved performance across substantially all product lines. MC reported a segment profit of $304.1 million in the nine months ended October 1, 2022, up 34% from $227.1 million in the year-ago period. The segment profit improvement was primarily due to higher gross profit related to the increased sales volume, partially offset by unfavorable foreign exchange effects and a 17% increase in operating expenses due to higher compensation costs.

Advanced Materials Handling (AMH)

For the third quarter of 2022, AMH net sales increased to $210.4 million, up 13% compared to $186.2 million in the comparable period last year. The sales increase was mainly due to improved sales from wafer handling and fluid handling. AMH reported a segment profit of $42.1 million in the third quarter of 2022, up 4% from $40.5 million in the year-ago period. The segment profit increase was primarily due to higher sales volume, partially offset by a 14% increase in operating expenses, primarily due to higher compensation costs.

For the nine months ended October 1, 2022, AMH net sales increased to $632.6 million, up 25% compared to $507.2 million in the comparable period last year. The sales increase was mainly due to improved sales from wafer handling, fluid handling and measurement products. AMH reported a segment profit of $135.7 million in the nine months ended October 1, 2022, up 18% from $114.7 million in the year-ago period. The segment profit increase was primarily due to higher sales volume, partially offset by unfavorable foreign exchange effects and a 17% increase in operating expenses, primarily due to higher compensation costs.

Advanced Planarization Solutions (APS)

For the third quarter of 2022, APS net sales increased to $293.9 million, compared to $21.8 million in the comparable period last year. The sales increase was mainly due to sales attributed to the CMC Materials acquisition. APS reported a segment profit of $18.9 million in the third quarter of 2022, from $7.5 million in the year-ago period. The segment profit increase was primarily due to the segment profit attributed to the CMC Materials acquisition, partially offset by a $56.8 million charge for a fair value write-up of acquired CMC Materials inventory sold.

For the nine months ended October 1, 2022, APS net sales increased to $352.8 million, compared to $62.6 million in the comparable period last year. The sales increase was mainly due to sales attributed to the CMC Materials acquisition. APS reported a segment profit of $40.2 million in the nine months ended October 1, 2022, from $21.8 million in the year-ago period. The segment profit increase was primarily due to the segment profit attributed to the CMC Materials acquisition, partially offset by a $56.8 million charge for a fair value write-up of acquired CMC Materials inventory sold.

Unallocated general and administrative expenses

Unallocated general and administrative expenses totaled $120.3 million in the third quarter of 2022, compared to $8.8 million in the comparable period last year. The $111.5 million increase is primarily due to a $77.9 million and $31.9 million increase in integration related and deal and transaction costs, respectively, related to the acquisition of CMC Materials.

Unallocated general and administrative expenses for the nine months ended October 1, 2022 totaled $160.8 million, up from $34.5 million in the nine months ended October 2, 2021. The $126.2 million increase is primarily due a $86.6 million and $39.3 million increase in integration related and deal and transaction costs, respectively, related to the acquisition of CMC Materials.

Liquidity and Capital Resources

We consider the following when assessing our liquidity and capital resources:

In thousands	October 1, 2022	December 31, 2021
Cash and cash equivalents including restricted cash	$ 754,667	$ 402,565
Working capital	1,381,255	934,369
Total debt, net of unamortized discount and debt issuance costs	5,847,485	937,027

The Company has historically financed its operations and capital requirements through cash flow from its operating activities, long-term loans, lease financing and borrowings under domestic and international short-term lines of credit. On April 14, 2022, the Company, via a wholly-owned escrow subsidiary, completed a private offering of $1.6 billion aggregate principal amount of the 2029 Notes. On June 30, 2022, the Company, via a wholly-owned escrow subsidiary, completed a private offering of $0.9 billion aggregate principal amount of the 2030 Notes. In connection with the acquisition of CMC Materials on the Closing Date, the Company borrowed $2.495 billion under the Initial Term Loan Facility and increased commitments by $175.0 million under the Revolving Facility (from $400.0 million to $575.0 million). The Company used a portion of the proceeds of the offering to repay the remaining principal amount of the $145.0 million senior secured term loan facility due 2025. In addition, on the Closing Date, the Company entered into a 364-Day Bridge Credit Agreement and borrowed $275 million aggregate principal amount with a pricing of SOFR plus 4.55%. During the quarter, the Company made a $70.0 million principal payment on the Bridge Credit Facility.

Based on our analysis, we believe our existing balances of domestic cash and cash equivalents and our currently anticipated operating cash flows will be sufficient to meet our cash needs arising in the ordinary course of business for the next twelve months and for the longer term.

We may seek to take advantage of opportunities to raise additional capital through additional debt financing or through public or private sales of securities. If in the future our available liquidity is not sufficient to meet the Company’s operating and debt service obligations as they come due, management would need to pursue alternative arrangements through additional equity or debt financing in order to meet the Company’s cash requirements. There can be no assurance that any such financing would be available on commercially acceptable terms, or at all. To date, in fiscal 2022, we have not experienced difficulty accessing capital and credit markets, but future volatility in the capital and credit markets may increase costs associated with issuing debt instruments or affect our ability to access those markets. In addition, it is possible that our ability to access the capital and credit markets could be limited at a time when we would like, or need, to do so, which could have an adverse impact on our ability to refinance maturing debt and/or react to changing economic and business conditions.

In summary, our cash flows for each period were as follows:

	Nine months ended	
(in thousands)	**October 1, 2022**	**October 2, 2021**
Net cash provided by operating activities	$ 320,230	$ 284,474
Net cash used in investing activities	(4,792,637)	(131,820)
Net cash provided by (used in) financing activities	4,846,009	(254,513)
Increase (decrease) in cash, cash equivalents and restricted cash	352,102	(105,141)

Operating activities Cash provided by operating activities is net income adjusted for certain non-cash items and changes in assets and liabilities. Cash flows provided by operating activities totaled $320.2 million in the nine months ended October 1, 2022, compared to $284.5 million in the nine months ended October 2, 2021. The increase was driven by a $19.0 million increase of Net (loss) income adjusted for non-cash reconciling items and by $16.8 million of changes in operating assets and liabilities.

Changes in operating assets and liabilities for the nine months ended October 1, 2022 were driven primarily by increases in inventories and accounts payable and accrued liabilities, and decreases in trade receivables and income taxes payable and refundable income taxes. The change for inventory was driven by an increase in business activity and need for raw material safety stock. The change for accounts payable and accrued liabilities was driven by an increase in accrued interest payable related to the debt financing in connection with the CMC Materials acquisition. The change for trade receivables was mainly due to a lower increase in sales compared to that of the comparable previous period. The change for income taxes payable and refundable income taxes was primarily driven by a recorded tax impact of Section 174 R&D cost capitalization in 2022 only.

Investing activities Cash flows used in investing activities totaled $4,792.6 million in the nine months ended October 1, 2022, compared to $131.8 million in the nine months ended October 2, 2021. The change resulted primarily from higher cash paid for acquisition of property, plant and equipment and the cash paid for the acquisition of CMC Materials. See Note 3 to the Company’s condensed consolidated financial statements for additional discussion on the acquisition of CMC Materials.

Financing activities Cash provided by financing activities totaled $4,846.0 million during the nine months ended October 1, 2022, compared to cash used in financing activities of $254.5 million during the nine months ended October 2, 2021. The change was primarily due to the net long-term debt activity, which was a source of cash of $4.9 billion in 2022 compared to a use of cash of $174.1 million, and the absence of $50.0 million of repurchase and retirement of common stock. See Note 7 to the Company’s condensed consolidated financial statements for further discussion of the debt financing that occurred during the quarter. In anticipation of its acquisition of CMC Materials, the Company suspended its previously announced share repurchase program in the fourth quarter of 2021 and does not anticipate authorizing a new repurchase program or resuming a repurchase program in 2022.

Our total dividend payments were $42.4 million in the nine months ended October 1, 2022, compared to $32.7 million in the nine months ended October 2, 2021. We have paid a cash dividend in each quarter since the fourth quarter of 2017. On October

19, 2022, the Company's Board of Directors declared a quarterly cash dividend of $0.10 per share to be paid on November 23, 2022 to shareholders of record on the close of business on November 2, 2022.

Other Liquidity and Capital Resources Considerations

Debt

(In thousands)	October 1, 2022	December 31, 2021
Senior secured term loan facility due 2029	$ 2,495,000	$ —
Senior secured notes due 2029 at 4.75%	1,600,000	—
Senior unsecured notes due 2030 at 5.95%	895,000	—
Senior unsecured notes due 2029 at 3.625%	400,000	400,000
Senior unsecured notes due 2028 at 4.375%	400,000	400,000
Bridge credit facility due 2023	205,000	—
Senior secured term loan facility due 2025 at 2.457%	—	145,000
Revolving facility due 2026	—	—
Total debt (par value)	$ 5,995,000	$ 945,000

In connection with the acquisition of CMC Materials, the Company obtained the following financing: On the Closing Date, the Company entered into a Term Loan B Facility of $2.495 billion with a pricing at SOFR plus 3.00%. The Company previously syndicated the Initial Term Loan Facility on March 2, 2022 and incurred ticking fees through the close of the acquisition. The Company used a portion of the proceeds of the offering to repay the remaining principal amount of the $145.0 million senior secured term loan facility due 2025. For the three and nine months ended October 1, 2022, the Company incurred $0.4 million and $12.0 million in ticking fees, respectively, which were recorded to interest expense in the condensed consolidated statement of operations. The senior secured term loan facility due 2025 was paid in full on the day of acquisition. On the Closing Date, the Company entered into a $275 million senior unsecured Bridge Credit Facility with a pricing of SOFR plus 4.55%. During the quarter, the Company made a $70.0 million principal payment on the Bridge Credit Facility. On June 30, 2022, the Company issued, via a wholly-owned escrow subsidiary, $895 million aggregate principal amount of the 2030 Notes. On April 14, 2022, the Company also issued, via a wholly-owned escrow subsidiary, $1.6 billion aggregate principal amount of the 2029 Notes.

The Company increased the commitments under the Revolving Facility by $175.0 million (from $400.0 million to $575.0 million) in connection with the closing of the acquisition of CMC Materials on the Closing Date. The Revolving Facility bears interest at a rate per annum equal to, at the Company's option, either a base rate (such as prime rate) or SOFR, plus, in each case, an applicable margin. At October 1, 2022, there was no balance outstanding under the Revolving Facility and we had undrawn outstanding letters of credit of $0.2 million.

On July 28, 2022, the Company entered into a floating-to-fixed interest rate swap agreement to hedge the variability in SOFR-based interest payments associated with $1.95 billion of its $2.495 billion Initial Term Loan Facility. The notional amount is scheduled to decrease quarterly and will expire on December 30, 2025.

Through October 1, 2022, the Company was in compliance with the financial covenants under its debt arrangements.

The Company also has a line of credit with one bank that provides for borrowings in Japanese yen for the Company's Japanese subsidiaries, equivalent to an aggregate of approximately $6.9 million. There were no outstanding borrowings under this line of credit at October 1, 2022.

Cash and cash requirements

(In thousands)	October 1, 2022	December 31, 2021
U.S.	$ 335,627	$ 107,814
Non-U.S.	417,160	294,751
Cash and cash equivalents	752,787	402,565
Restricted cash - U.S.	1,880	—
Cash, cash equivalents and restricted cash	$ 754,667	$ 402,565

Our cash and cash equivalents include cash on hand and highly liquid debt securities with original maturities of three months or less, which are valued at cost and approximate fair value. We utilize a variety of funding strategies in an effort to ensure that our worldwide cash is available in the locations in which it is needed. We have accrued taxes on any earnings that are not indefinitely reinvested. No additional withholding taxes have been accrued for any indefinitely reinvested earnings.

Our restricted cash represents cash held in a "Rabbi" trust and is not available for general corporate purposes. See Note 4 to the condensed consolidated financial statements for additional information.

Cash requirements

We have cash requirements to support working capital needs, capital expenditures, business acquisitions, contractual obligations, commitments, principal and interest payments on debt and other liquidity requirements associated with our operations. We generally intend to use available cash and funds generated from our operations to meet these cash requirements, but in the event that additional liquidity is required we may also borrow under our Revolving Facility.

There were no material changes to the cash requirements from our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, except for interest payments on long-term debt and new long-term debt in connection with the acquisition of CMC Materials on the Closing Date. The Company financed the cash portion of the purchase price for this acquisition through debt financing. See Note 7 to the Company's condensed consolidated financial statements for further discussion of the debt financing that occurred during the quarter and on the Closing Date of the acquisition. The following table summarizes the short and long-term cash requirements for long-term debt and interest expense as of October 1, 2022.

(In thousands)	Total	Due within 3 months of October 1, 2022	Due later than one year from December 31, 2022
Long-term debt	$ 5,995,000	$ —	$ 5,995,000
Interest payments on long-term debt	2,116,019	79,646	2,036,373
Total	$ 8,111,019	$ 79,646	$ 8,031,373

On July 28, 2022, the Company entered into a floating-to-fixed interest rate swap agreement to hedge the variability in SOFR-based interest payments associated with $1.95 billion of its $2.495 billion Initial Term Loan Facility. The notional amount is scheduled to decrease quarterly and will expire on December 30, 2025.

As of October 1, 2022, we believe our cash, cash equivalents, restricted cash, cash generated from operations, and our ability to access the capital markets will satisfy our cash needs for the foreseeable future both globally and domestically.

Recently adopted accounting pronouncements Refer to note 1 to the Company's condensed consolidated financial statements for a discussion of recently adopted accounting pronouncements.

Recently issued accounting pronouncements Refer to note 1 to the Company's condensed consolidated financial statements for a discussion of recently issued but not yet adopted accounting pronouncements.

Non-GAAP Information The Company's condensed consolidated financial statements are prepared in conformity with GAAP.

The Company also utilizes certain non-GAAP financial measures as a complement to financial measures provided in accordance with GAAP in order to better assess and reflect trends affecting the Company's business and results of operations. These non-GAAP financial measures include adjusted EBITDA and adjusted operating income, together with related measures thereof, and non-GAAP earnings per share, as well as certain other supplemental non-GAAP financial measures included in the discussion of the Company's financial results.

Adjusted EBITDA is defined by the Company as net income before, as applicable, (1) income tax expense, (2) interest expense, (3) interest income, (4) other expense (income), net, (5) charge for fair value write-up of acquired inventory sold, (6) deal and transaction costs, (7) integration costs, (8) severance and restructuring costs, (9) amortization of intangible assets and

(10) depreciation. Adjusted operating income is defined by the Company as adjusted EBITDA exclusive of the depreciation addback noted above. The Company also utilizes non-GAAP financial measures whereby adjusted EBITDA and adjusted operating income are each divided by the Company's net sales to derive adjusted EBITDA margin and adjusted operating margin, respectively.

Non-GAAP Net Income is defined by the Company as net income before, as applicable, (1) charge for fair value write-up of acquired inventory sold, (2) deal and transaction costs, (3) integration costs, (4) severance and restructuring costs, (5) loss on extinguishment of debt and modification, (6) Interest expense, net (7) amortization of intangible assets, (8) the tax effect of the foregoing adjustments to net income, stated on a per share basis and (9) tax effect of legal entity restructuring. Non-GAAP EPS is defined as our Non-GAAP Net Income divided by our diluted weighted-average shares outstanding

The Company provides supplemental non-GAAP financial measures to help management and investors to better understand our business and believes these measures provide investors and analysts additional and meaningful information for the assessment of the Company's ongoing results. Management also uses these non-GAAP measures to assist in the evaluation of the performance of the Company's business segments and to make operating decisions.

Management believes the Company's non-GAAP measures help indicate the Company's baseline performance before certain gains, losses or other charges that may not be indicative of the Company's business or future outlook and offer a useful view of business performance in that the measures provide a more consistent means of comparing performance. The Company believes the non-GAAP measures aid investors' overall understanding of the Company's results by providing a higher degree of transparency for such items and providing a level of disclosure that will help investors understand how management plans, measures and evaluates the Company's business performance. Management believes that the inclusion of non-GAAP measures provides greater consistency in its financial reporting and facilitates investors' understanding of the Company's historical operating trends by providing an additional basis for comparisons to prior periods.

Management uses adjusted EBITDA and adjusted operating income to assist it in evaluations of the Company's operating performance by excluding items that management does not consider as relevant in the results of its ongoing operations. Internally, these non-GAAP measures are used by management for planning and forecasting purposes, including the preparation of internal budgets; for allocating resources to enhance financial performance; for evaluating the effectiveness of operational strategies; and for evaluating the Company's capacity to fund capital expenditures, secure financing and expand our business.

In addition, and as a consequence of the importance of these non-GAAP financial measures in managing our business, the Company's Board of Directors uses non-GAAP financial measures in the evaluation process to determine management compensation.

The Company believes that certain analysts and investors use adjusted EBITDA, adjusted operating income and non-GAAP EPS as supplemental measures to evaluate the overall operating performance of firms in the Company's industry. Additionally, lenders or potential lenders use adjusted EBITDA measures to evaluate the Company's creditworthiness.

The presentation of non-GAAP financial measures is not meant to be considered in isolation, as a substitute for, or superior to, financial measures or information provided in accordance with GAAP. Management strongly encourages investors to review the Company's condensed consolidated financial statements in their entirety and to not rely on any single financial measure.

Management notes that the use of non-GAAP measures has limitations, including but not limited to:

First, non-GAAP financial measures are not standardized. Accordingly, the methodology used to produce the Company's non-GAAP financial measures is not computed under GAAP and may differ notably from the methodology used by other companies. For example, the Company's non-GAAP measure of adjusted EBITDA may not be directly comparable to EBITDA or an adjusted EBITDA measure reported by other companies.

Second, the Company's non-GAAP financial measures exclude items such as amortization and depreciation that are recurring. Amortization of intangibles and depreciation have been, and will continue to be for the foreseeable future, a significant recurring expense with an impact upon the Company's results of operations, notwithstanding the lack of immediate impact upon cash flows.

Third, there is no assurance that the Company will not have future charges for fair value write-up of acquired inventory, restructuring activities, deal costs, integration costs, or similar items and, therefore, may need to record additional charges (or credits) associated with such items, including the tax effects thereon. The exclusion of these items in the Company's non-GAAP measures should not be construed as an implication that these costs are unusual, infrequent or non-recurring.

Management considers these limitations by providing specific information regarding the GAAP amounts excluded from these non-GAAP financial measures and evaluating these non-GAAP financial measures together with their most directly comparable financial measures calculated in accordance with GAAP. The calculations of adjusted EBITDA, adjusted operating income, and non-GAAP EPS, and reconciliations between these financial measures and their most directly comparable GAAP equivalents, are presented below in the accompanying tables.

Reconciliation of GAAP Net Income to Adjusted Operating Income and Adjusted EBITDA

	Three months ended		Nine months ended	
(In thousands)	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Net sales	$ 993,828	$ 579,493	$ 2,335,963	$ 1,663,689
Net (loss) income	$ (73,703)	$ 117,461	$ 151,493	$ 290,907
Net income - as a % of net sales	(7.4 %)	20.3 %	6.5 %	17.5 %
Adjustments to net (loss) income				
Income tax (benefit) expense	(7,015)	10,640	30,377	39,947
Interest expense	84,150	9,395	129,027	31,744
Interest income	(1,395)	(56)	(2,065)	(181)
Other expense, net	12,852	1,917	27,373	29,807
GAAP – Operating income	14,889	139,357	336,205	392,224
Operating margin - as a % of net sales	1.5 %	24.0 %	14.4 %	23.6 %
Deal and transaction costs	31,867	—	39,285	—
Integration costs	20,762	1,290	32,173	3,966
Contractual and non-cash integration costs	58,411	—	58,411	—
Charge for fair value write-up of acquired inventory sold	61,932	—	61,932	—
Severance and restructuring costs	—	206	—	529
Amortization of intangible assets	65,346	11,843	90,491	35,616
Adjusted operating income	253,207	152,696	618,497	432,335
Adjusted operating margin - as a % of net sales	25.5 %	26.3 %	26.5 %	26.0 %
Depreciation	45,203	22,841	93,489	67,510
Adjusted EBITDA	$ 298,410	$ 175,537	$ 711,986	$ 499,845
Adjusted EBITDA – as a % of net sales	30.0 %	30.3 %	30.5 %	30.0 %

Reconciliation of GAAP Net Income and Earnings per Share to Non-GAAP Net Income and Earnings per Share

	Three months ended		Nine months ended	
(In thousands, except per share data)	October 1, 2022	October 2, 2021	October 1, 2022	October 2, 2021
Net (loss) income	$ (73,703)	$ 117,461	$ 151,493	$ 290,907
Adjustments to net (loss) income				
Deal and transaction costs	31,867	—	39,285	—
Integration costs	20,762	1,290	32,173	3,966
Contractual and non-cash integration costs	58,411	—	58,411	—
Charge for fair value of acquired inventory sold	61,932	—	61,932	—
Severance and restructuring costs	—	206	—	529
Loss on extinguishment of debt and modification	2,235	—	2,235	23,338
Interest expense, net	2,397	—	29,822	—
Amortization of intangible assets	65,346	11,843	90,491	35,616
Tax effect of adjustments to net (loss) income and certain discrete tax items[1]	(41,477)	(5,417)	(56,123)	(16,749)
Non-GAAP net income	$ 127,770	$ 125,383	$ 409,719	$ 337,607
Diluted (loss) earnings per common share	$ (0.50)	$ 0.86	$ 1.08	$ 2.13
Effect of adjustments to net (loss) income	1.35	0.06	1.83	0.34
Diluted non-GAAP earnings per common share	$ 0.85	$ 0.92	$ 2.91	$ 2.47
Diluted weighted averages shares outstanding	148,570	136,631	140,892	136,556
Effect of adjustment to diluted weighted average shares outstanding	1,099	—	—	—
Diluted non-GAAP weighted average shares outstanding	149,669	136,631	140,892	136,556

[1]The tax effect of pre-tax adjustments to net income was calculated using the applicable marginal tax rate for each respective year.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The Company's principal financial market risks are sensitivities to interest rates and foreign currency exchange rates. The Company's interest-bearing cash, cash equivalents, restricted cash and senior secured financing obligations are subject to interest rate fluctuations. The Company's cash equivalents are instruments with maturities of three months or less. A 100-basis point change in interest rates would potentially increase or decrease annual net income by approximately $16.8 million and $2.6 million as of October 1, 2022 and October 2, 2021, respectively. On July 28, 2022, the Company entered into a floating-to-fixed interest rate swap agreement to hedge the variability in SOFR-based interest payments associated with $1.95 billion of its $2.495 billion Initial Term Loan Facility. The notional amount is scheduled to decrease quarterly and will expire on December 30, 2025.

The cash flows and results of operations of the Company's foreign-based operations are subject to fluctuations in foreign exchange rates. We have sales denominated in the South Korean Won, New Taiwan Dollar, Chinese Renminbi, Malaysian Ringgit, Canadian Dollar, Great British Pound, Euro, Singapore Dollar, Israeli Shekel and the Japanese Yen. Approximately 22.9% and 23.7% of the Company's sales for the quarters ended October 1, 2022 and October 2, 2021, respectively, are denominated in these currencies. Financial results therefore can be and have been affected by changes in currency exchange rates, as seen in the Company's results in this quarter. If all foreign currencies had experienced a 10% reduction versus the U.S. dollar during the three months ended October 1, 2022 and October 2, 2021, revenue for the quarters would have been negatively impacted by approximately $18.6 million and $13.4 million, respectively.

The Company occasionally uses derivative financial instruments to manage the foreign currency exchange rate risks associated with its foreign-based operations. However, we are unlikely to be able to hedge these exposures completely. We do not enter into forward contracts or other derivative instruments for speculative or trading purposes. At October 1, 2022, the Company had no material net exposure to any foreign currency forward contracts.

Item 4. Controls and Procedures

(a) Evaluation of disclosure controls and procedures.
The Company's management, including the Chief Executive Officer, or CEO, and Chief Financial Officer, or CFO, has conducted an evaluation of the effectiveness of the Company's disclosure controls and procedures (as defined under Rules 13a-15(e) and 15d-15(e) promulgated under the Securities Exchange Act of 1934, or the Exchange Act) as of October 1, 2022. The term "disclosure controls and procedures" means controls and other procedures that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on management's evaluation (with the participation of the Company's CEO and CFO), as of October 1, 2022, the Company's CEO and CFO have concluded that the disclosure controls and procedures used by the Company were effective to provide reasonable assurance that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and is accumulated and communicated to management, including its principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.
(b) Changes in internal control over financial reporting.

As discussed in Note 3 to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q, the Company completed its acquisition of CMC Materials on July 6, 2022. As permitted by interpretive guidance for newly acquired businesses issued by the SEC Staff, management has excluded the internal control over financial reporting of CMC Materials from the evaluation of the Company's effectiveness of its disclosure controls and procedures as of October 1, 2022. Since the date of the acquisition of CMC Materials, CMC Materials' financial results are included in the Company's condensed consolidated financial statements. As part of our post-closing integration activities, we are engaged in the process of assessing the internal controls. The Company has begun to integrate policies, processes, people, technology and operations for the post-acquisition combined company, and it will continue to evaluate the impact of any related changes to internal control over financial reporting.

Other than the items discussed above, there has been no change in the Company's internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) identified in connection with the foregoing evaluation of disclosure controls and procedures that occurred during the most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II

OTHER INFORMATION

Item 1. Legal Proceedings

As of October 1, 2022, the Company is subject to various claims, legal actions, and complaints arising in the ordinary course of business. The Company believes the final outcome of these matters will not have a material adverse effect on its condensed consolidated financial statements. The Company expenses legal costs as incurred.

Item 1A. Risk Factors

We are not aware of any material changes to the risk factors included in Item 1A. “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021, and Part II, Item 1A, “Risk Factors” in our Quarterly Report on Form 10-Q for the quarter ended April 2, 2022 and July 2, 2022, except for the addition of the following risk factors:

Risks Related to Our Business and Industry

Tariffs, export controls and other trade laws and restrictions resulting from international trade disputes, strained international relations and changes to foreign and national security policy, especially as they relate to China, could have an adverse impact on our operations.

Tariffs, additional taxes, trade barriers and other measures, particularly those arising out of relations between the United States and China, may increase costs of raw materials and our manufacturing costs, decrease margins, reduce the competitiveness of our products or inhibit our ability to sell products or purchase necessary equipment and supplies, any of which could have a material adverse effect on our business, results of operations or financial condition. For example, both the United States and China have implemented several rounds of tariffs and retaliations with respect to certain products imported from the other country, some of which have impacted certain raw materials we use. We have made operational changes in an effort to mitigate the impact of these tariffs on our products, but our efforts may not be successful.

In addition, we are subject to export control and economic sanctions laws and regulations that restrict the delivery of some of our products and services to certain end users, countries and nationals of certain countries. In certain circumstances, these restrictions may prohibit the transfer of certain of our products, services and technologies, and in other circumstances they may require us to obtain a license from the U.S. government before delivering the controlled item or service. We must also comply with export control and economic sanctions laws and regulations imposed by other countries. Although we maintain an export and trade control compliance program, it may be ineffective or circumvented, exposing us to legal liabilities. Compliance with these laws could significantly limit our sales in the future. Changes in, and responses to, U.S. trade controls could reduce the competitiveness of our products and cause our sales to drop, which could have a material adverse effect on our business, financial condition and results of operations.

Over the last several years, the U.S. government has significantly expanded export controls on certain technologies and commodities to certain markets, particularly with respect to semiconductor and other high technology exports to China. For example, on October 7, 2022, the U.S. Commerce Department of Commerce, Bureau of Industry and Security (“BIS”) announced new export control regulations that restrict the sale of certain products and services to some companies and domestic fabs in China. Additionally, effective June 29, 2020, the U.S. Department of Commerce imposed new export controls on the transfer of many U.S. products and technologies, including many commercial-grade electronics, to “military end users” in China, a term which may include many Chinese commercial companies that sell products to or do business with the military. Likewise, beginning in May 2019, the U.S. Department of Commerce imposed significant restrictions on the transfer of any products from the United States, as well as many products produced overseas that incorporate U.S. content or rely on U.S. software or technology, to Huawei Technologies Co., Ltd. and several of its overseas affiliates, including HiSilicon, and took similar action against Semiconductor Manufacturing International Corporation in December 2020. The U.S. Department of Commerce continues to impose similar export-related restrictions against other Chinese companies for their support of the military, for business activities, including supply chain activities, related to the Xinjiang region of China, and for other actions found to be contrary to U.S. national security or foreign policy. The U.S. government also continuously assesses which “emerging and foundational technologies” warrant new or additional controls, which could subject additional U.S.-origin products and services to more stringent export restrictions. These modified regulations have reduced our ability to sell our products and it is possible future regulation could further reduce demand for our products. As a result of these restrictive measures, certain of our customers have made efforts to source products domestically in order to mitigate perceived risks to their supply chain. If these efforts are successful, are widespread amongst our customers and expand to our products and solutions broadly, overall global demand for our customers’ products or for other products produced or manufactured in the United States or based on U.S. technology may be reduced, in turn reducing demand for our products, which could have a material adverse effect on our business, financial condition and results of operations. Such risks may be especially exacerbated as they relate to China, a market that is important to our business, representing approximately 16% of our sales in 2021.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

Issuer Purchases of Equity Securities

The Company did not purchase any of its equity securities during the quarter ended October 1, 2022.

On December 14, 2020, the Company's Board of Directors authorized a repurchase program, effective February 16, 2021, covering the repurchase of up to an aggregate of $125 million of the Company's common stock during a period of twelve months, in open market transactions and in accordance with one or more pre-arranged stock trading plans to be established in accordance with Rule 10b5-1 under the Exchange Act. This repurchase program expired pursuant to its terms on February 15, 2022. In anticipation of its acquisition of CMC Materials, the Company suspended its previously announced share repurchase program in the fourth quarter of 2021 and does not anticipate authorizing a new repurchase program or resuming a repurchase program in 2022.

The Company issues common stock awards under its equity incentive plans. In the condensed consolidated financial statements, the Company treats shares of common stock withheld for tax purposes on behalf of its employees in connection with the vesting or exercise of the awards as common stock repurchases because they reduce the number of shares that would have been issued upon vesting or exercise. These withheld shares of common stock are not considered common stock repurchases under the Company's authorized common stock repurchase plan.

Item 6. Exhibits

EXHIBIT INDEX

A. The Company hereby incorporates by reference as exhibits to this Quarterly Report on Form 10-Q the following documents:

Reg. S-K Item 601(b) Reference	Document Incorporates	Referenced Document on file with t Commission
(4)	Supplemental Indenture to the 2029 Secured Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Truist Bank, as trustee and notes collateral agent.	Exhibit 4.3 to Entegris, Inc. Current Repo Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
(4)	Supplemental Indenture to the 2030 Unsecured Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Truist Bank, as trustee.	Exhibit 4.4 to Entegris, Inc. Current Repo Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
(4)	Equal Priority Intercreditor Agreement, dated as of July 6, 2022, among Entegris, certain subsidiaries of Entegris, Morgan Stanley Senior Funding, Inc., as senior credit facilities collateral agent, and Truist Bank, as notes collateral agent.	Exhibit 4.5 to Entegris, Inc. Current Repo Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
(4)	Supplemental Indenture to the 2028 Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Computershare Trust Company, National Association, as successor to Wells Fargo Bank, National Association, as trustee.	Exhibit 4.7 to Entegris, Inc. Current Repo Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
(4)	Supplemental Indenture to the 2029 Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Computershare Trust Company, National Association, as successor to Wells Fargo Bank, National Association, as trustee.	Exhibit 4.9 to Entegris, Inc. Current Repo Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
(4)	Amendment and Restatement Agreement, dated as of July 6, 2022, among Entegris, Inc., as borrower, certain subsidiaries of Entegris, Inc., as guarantors, the lenders party thereto, the issuing banks party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent and collateral agent.	Exhibit 4.10 to Entegris, Inc. Current Rep Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
(4)	364-Day Bridge Credit and Guaranty Agreement, dated as of July 6, 2022, among Entegris, Inc., as borrower, certain subsidiaries of Entegris, Inc., as guarantors, the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent.	Exhibit 4.11 to Entegris, Inc. Current Rep Form 8-K filed with the Securities and Exchange Commission on July 6, 2022

B. The Company hereby files as exhibits to this Quarterly Report on Form 10-Q the following documents:

Reg. S-K Item 601(b) Reference	Exhibit No.	Document Filed Herewith
(10)	10.1	Fourth Amendment to Lease Agreement, dated as of September 16, 2022, by and between the Company and Rivertech Owner LLC
(10)	10.2	Separation Agreement and Release, dated as of September 1, 2022, by and between the Company and Todd Edlund
(31)	31.1	Certification of Chief Executive Officer Pursuant to Exchange Act Rule 13a-14(a).
(31)	31.2	Certification of Chief Financial Officer Pursuant to Exchange Act Rule 13a-14(a).
(32)	32.1	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
(101)	101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
(101)	101.SCH	XBRL Taxonomy Extension Schema Document
(101)	101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
(101)	101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
(101)	101.LAB	XBRL Taxonomy Extension Label Linkbase Document
(101)	101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
(104)	104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

	ENTEGRIS, INC.
Date: November 2, 2022	/s/ Gregory B. Graves
	Gregory B. Graves Executive Vice President and Chief Financial Officer (on behalf of the registrant and as principal financial officer)

FOURTH AMENDMENT TO LEASE AGREEMENT

THIS FOURTH AMENDMENT TO LEASE AGREEMENT (this "**Amendment**") is made as of the ___ day of September, 2022, by and between RIVERTECH OWNER LLC, a Delaware limited liability company ("**Landlord**"), and ENTEGRIS, INC., a Delaware corporation ("**Tenant**").

RECITALS:

WHEREAS, Landlord (as successor-in-interest to KBS Rivertech, LLC, as successor-in-interest to Nortel Networks HPOCS Inc.), and Tenant (as successor-in-interest to Mykrolis Corporation), are parties to that certain Lease Agreement, dated as of April 1, 2002 (the "**Original Lease**"), as amended by that certain Amendment of Lease dated April 1, 2012 (the "**First Amendment**"), by that certain Second Amendment of Lease dated March 8, 2016 (the "**Second Amendment**"), and by that certain Third Amendment to Lease Agreement dated October 21, 2021 (the "**Third Amendment**", and the Original Lease, as so amended, the "**Current Lease**"), with respect to the building known as Building 2 (the "**Building**") at the property known as RiverTech Park and having an address of 129 Concord Road, Billerica, MA (the "**Property**");

WHEREAS, Tenant desires for the existing natural gas line serving the Building to be upgraded in order to accommodate the delivery of increased gas capacity to the Building by the current utility provider, National Grid (the "**Upgrade**"), and Landlord has agreed to cooperate with Tenant in connection with the Upgrade, subject to the terms and conditions of this Amendment;

WHEREAS, Tenant and Landlord have agreed to make certain amendments and modifications to the terms and provisions of the Current Lease, all as more particularly set forth in this Amendment.

AGREEMENTS:

NOW, THEREFORE, in exchange for the mutual promises contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Landlord and Tenant hereby covenant and agree as follows:

1. Defined Terms. Capitalized terms used in this Amendment not otherwise defined herein shall have the respective meanings given to such terms in the Current Lease. In the event of any conflict between the terms of the Current Lease and the terms of this Amendment, the terms set forth in this Amendment shall control. As used herein, the term "Lease" shall mean the Current Lease, as modified by this Amendment.

1. Upgrade. Tenant shall have the right to request that National Grid perform (or cause to be performed) the Upgrade, subject to the terms and conditions of this Paragraph 2. If Tenant elects to request the Upgrade, Landlord shall reasonably cooperate with Tenant and with National Grid in connection with the Upgrade, at no cost or expense to Landlord and subject to following terms and conditions:

a. Landlord and Tenant acknowledge and agree that Tenant shall be solely responsible for the Upgrade, at Tenant’s sole cost and expense, and that Landlord shall have no liability or responsibility whatsoever in connection with the Upgrade, including, without limitation, the design, installation and maintenance thereof, and any associated increase in gas capacity to the Building. Without limiting the foregoing or anything in the Lease to the contrary, Landlord makes no representation or warranty regarding the existing or contemplated natural gas service to the Building or the suitability of the Property for the performance of the Upgrade. The performance of the Upgrade shall be subject to all applicable legal requirements and to all existing rights in and to the Property, including without limitation the rights of other tenants and occupants of the Property, and shall not interfere with Landlord's or any other tenant's or occupant's business or with the rights and privileges of third parties having the right to utilize and/or otherwise access the Property, and in confirmation of the foregoing Tenant represents and warrants to Landlord that the performance of the Upgrade will be performed in accordance with all such legal requirements.

a. Prior to commencing performance of the Upgrade, detailed plans and specifications of the Upgrade shall be submitted to Landlord for Landlord’s written approval; without limiting anything herein to the contrary, in no event shall Tenant or National Grid commence performance of the Upgrade prior to Landlord’s approval of such plans and specifications. The plans and specifications approved by Landlord shall hereinafter be referred to as the “**Approved Plans**”. Prior to commencing performance of the Upgrade, Tenant and/or National Grid, as applicable, shall file for and obtain all permits, approvals or certificates required to be obtained in connection with the Upgrade pursuant to applicable legal requirements (the “**Required Permits**”). The Upgrade shall be performed by National Grid in accordance with (i) the Approved Plans, and (ii) all Required Permits. Upon Tenant’s request, Landlord shall exercise reasonable efforts to cooperate with Tenant in obtaining any permits, approvals or certificates required to be obtained by Tenant in connection with the Upgrade (if the provisions of the applicable legal requirements or National Grid policy requires that Landlord join in such application or otherwise notify National Grid of Landlord’s consent to the Upgrade), provided Landlord shall incur no cost, expense or liability in connection therewith. Notwithstanding the foregoing to the contrary, the approval of plans or specifications, or consent by Landlord to the performance of the Upgrade, shall not constitute Landlord’s agreement or representation that such Approved Plans or performance of the Upgrade comply with any applicable legal requirements. Landlord shall have no liability to Tenant or any other party in connection with Landlord’s approval of any plans and specifications for the Upgrade, or Landlord’s consent to Tenant’s performing the Upgrade, the parties hereby acknowledging that Landlord is relying on Tenant’s representation set forth in the last sentence of Section 2(a), above, in entering into this Amendment. At all times during National Grid’s entry onto the Property and performance of the Upgrade, National Grid shall maintain worker’s compensation insurance (covering all persons to be employed in connection with the Upgrade) including $1,000,000 employers liability coverage, General Liability (including bodily injury and property damage coverage) with limits of $3,000,000 per occurrence, auto liability of $1,000,000 and excess liability of $5,000,000 per occurrence, the parties hereby acknowledging and agreeing that as long as National Grid maintains the insurance coverage set forth in the Memorandum of Insurance attached hereto as Exhibit A, National Grid shall be deemed have satisfied the foregoing insurance requirements.

a. Promptly following completion of the Upgrade, Tenant, at its expense, shall obtain and deliver to Landlord, or cause to be delivered to Landlord, (i) evidence that Tenant has paid National Grid for the costs of the Upgrade; (ii) proof of the satisfactory completion of all required inspections and the issuance of any required approvals and sign-offs by governmental authorities with respect thereto; and (iii) "as-built" plans and specifications for such Upgrade. Tenant, at its expense, shall discharge or cause to be discharged any lien or charge filed against the Premises and/or the Property (or any part thereof) arising out of or resulting from any work claimed to have been done by or on behalf of, or materials claimed to have been furnished in connection with the Upgrade, within ten (10) days after Tenant's receipt of notice thereof. Upon completion of the Upgrade, Tenant shall repair and restore, or shall cause to be repaired and restored, in a good and workmanlike manner, any affected portions of the Property substantially to the condition they were in prior to the performance of the Upgrade, and shall further repair and restore any damage to the Premises, the Building or the Property resulting from or caused by the Upgrade and if Tenant fails to do so, Tenant shall reimburse Landlord, on demand, for Landlord's cost of repairing and restoring such damage. The foregoing provisions shall survive the expiration or earlier termination of this Lease.

a. Tenant shall pay to Landlord or its designee, as additional rent, within thirty (30) days after request therefor, all out-of-pocket costs actually incurred by Landlord (including reasonable attorneys' fees) in connection with the Upgrade including, without limitation, costs incurred in connection with (a) Landlord's review of the Upgrade and plans therefor (including review of requests for approval thereof), and (b) the provision of Property personnel during the performance of the Upgrade to facilitate said Upgrade.

a. [intentionally omitted]

a. To the maximum extent permitted by law, Tenant shall indemnify and save harmless Landlord and the members, managers, partners, directors, officers, agents, affiliates and employees of Landlord (collectively, the "**Indemnitees**"), against and from all claims, expenses, or liabilities of whatever nature arising directly or indirectly from the Upgrade, including without limitation any accident, injury, or damage, however caused, to any person or property, on or about the Property in connection with the Upgrade. The foregoing indemnity and hold harmless agreements shall include, without limitation, indemnity against all expenses, attorney's fees and liabilities incurred in connection with any such claim or proceeding brought thereon (including any claim or proceeding brought against any of the Indemnitees by National Grid, whether pursuant to an indemnity by Landlord in favor of National Grid, or otherwise) and the defense thereof with counsel acceptable to the Landlord. The indemnification obligations set forth in this paragraph shall survive the expiration or termination of this Lease.

1. Broker. Landlord and Tenant each warrants and represents that it has dealt with no broker in connection with the consummation of this Amendment. Landlord and Tenant each agrees to defend, indemnify and save the other harmless from and against any claims arising in breach of the representation and warranty set forth in the immediately preceding sentence.

1. Ratification. The Lease, as amended hereby, is hereby ratified and shall remain in full force and effect. As of the execution hereof, each party represents to the other that, to its actual knowledge, there exists no breach, condition, state of facts or event that constitutes, or with the passing of time or the giving of notice, or both, would constitute an Event of Default or a default, as the case may be, by either party under the Lease and that the Lease, and all of its terms, conditions, covenants, agreements and provisions, except as modified hereby, are in full force and effect with no defenses or offsets thereto.

1. Governing Law. This Amendment shall be construed and governed by the Laws of the Commonwealth of Massachusetts.

1. Authority. This Amendment shall be binding upon and inure to the benefit of the parties, their respective heirs, legal representatives, successors and assigns. Each party hereto warrants that the person signing below on such party's behalf is authorized to do so and to bind such party to the terms of this Amendment. The submission of drafts of this document for examination and negotiation does not constitute an offer, or a reservation of or option for, any of the terms and conditions set forth in this Amendment, and this Amendment shall not be binding upon Landlord or Tenant unless and until Landlord shall have executed and delivered a fully executed copy of this Amendment to Tenant.

1. Entire Agreement. This Amendment constitutes the entire agreement and understanding between the parties with respect to the subject of this Amendment and shall supersede all prior written and oral agreements concerning such subject matter. This Amendment may not be amended, modified or otherwise changed in any respect whatsoever except by a writing duly executed by authorized representatives of Landlord and Tenant.

1. Severability. If any provision of this Amendment or the application thereof to any person or circumstances shall be invalid or unenforceable to any extent, the remainder of this Amendment and the application of such provision to other persons or circumstances, other than those to which it is held invalid, shall not be affected and shall be enforced to the furthest extent permitted by law.

1. Counterparts. This Amendment may be executed in counterparts, and such counterparts together shall constitute but one original of this Amendment. Each counterpart shall be equally admissible in evidence, and each original shall fully bind each party who has executed it. The counterparts of this Amendment may be executed and delivered by PDF or electronic signature (e.g., DocuSign) by any of the parties to any other party and the receiving party may rely on the receipt of such document so executed and delivered as if the original had been received.

[signatures on following page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Amendment as of the date and year first above written.

LANDLORD:

RIVERTECH OWNER LLC
a Delaware limited liability company

By: ____________________
Name: Ron J. Hoyl
Title: Vice President
Hereunto duly authorized

TENANT:

ENTEGRIS, INC.
a Delaware corporation

By: ____________________
Name: ____________________
Title: ____________________
Hereunto duly authorized

<u>EXHIBIT A</u>

MEMORANDUM OF INSURANCE

MEMORANDUM OF INSURANCE	**July 1, 2022**

This Memorandum is issued as a matter of information only to authorized viewers for their internal use only and confers no rights upon any viewer of this Memorandum. This Memorandum does not amend, extend or alter the coverage described below. Any other use, duplication or distribution of this Memorandum without the consent of National Grid is prohibited. The information contained herein is as of the date referred to above. National Grid shall be under no obligation to update such information.

Producer	Companies Affording Coverage
	Company A Self-Insured
	Company B National Grid Insurance USA Ltd.
	Company C Liberty Mutual Insurance Company
	Company
Insured National Grid USA and its Subsidiaries which include, but are not limited to: Massachusetts Electric Company, Nantucket Electric, New England Power Company, Niagara Mohawk Power Corporation, National Grid USA Service Company, Boston Gas Company, The Brooklyn Union Gas Company and KeySpan Gas East Corporation collectively "National Grid"	Company Company

Coverages
The policies of insurance listed below have been issued to the insured named above for the policy period indicated, notwithstanding any requirement, term or condition of any contract or other document with respect to which this memorandum may be issued or may pertain, the insurance afforded by the polices described herein is subject to all the terms, exclusions and conditions of such policies. Limits shown may have been reduced by paid claims.

Co Ltr	Type of Insurance	Policy Number	Effective Expiration	Limits of Liability	
A	General Liability ☒ Commercial General Liability ☐ Claims Made ☒ Occurrence ☐ Owners' & Contractors' Prot. General Aggregate Limit applies per: ☐ Policy ☐ Project ☐ Location	Self- Insured	04/01/2022 04/01/2023	Each Occurrence Fire Damage Medical Expense Pers. And Adv Injury General Aggregate Products Comp/Op Aggregate	$ 3,000,000 $ $ $ $ $
A	Automobile Liability ☐ Any Automobile ☒ All Owned Automobiles ☐ Scheduled Automobiles ☒ Hired Automobiles ☒ Non-owned Automobiles	Self-Insured	04/01/2022 04/01/2023	Combined Single Limit Bodily Injury (per person) Bodily Injury (per accident) Property Damage (per accident) Comprehensive	$ 3,000,000 $ $ $ $
B	Excess Liability ☒ Occurrence ☐ Claims Made	NGUS/PL/22/102	04/01/2022 04/01/2023	Each Occurrence Aggregate	$5,000,000 $
	Workers Compensation and employers liability Proprietors/Partners/ ☐ incl Executive Officers are ☐ excl			☐ WC Statutory Limit ☐ Other EL Each Accident EL Disease – policy limit EL Disease – each employee	
C	Other Excess Workers' Compensation	EW2-62N-004536-552 (NY) EW2-62N-004536-562 (RI, NH) EW2-62N-004536-572 (MA)	07/01/2022 07/01/2023	SIR WC Limit EL Limit $1M Statutory $1M	
B	All Risk Property	NGUS/PD/22/031	04/01/2022 04/01/2023	$1.0M for Distribution; $5.0M for Transmission - excluding transformers. Replacement cost coverage applies. Blanket coverage limit in excess of $10M; Excludes coverage for generation.	

Description of Operations/Locations/Vehicles/Special Items
Commercial General Liability & Excess Liability Insurance -Additional Insured status is automatic for any person, company, or organization where a National Grid Company is required by a written contract or a written agreement to add such person, company, or organization as an additional insured on our liability policy, but only with respect to liability arising out of National Grid's operations.
Waiver of Subrogation is permitted as required by an executed written agreement with National Grid, and in accordance with the terms, conditions, and exclusions of the applicable policies.
Auto Comprehensive and Collision Coverage is self-insured by National Grid for all vehicles.
Evidence of Property Insurance: Any party which the National Grid is contractually required to include as a Loss Payee, or Mortgagee is granted such status under this policy as such interest may appear. Coverage under the policy applies only if such notice has been given and to the extent of the coverage required by such contractual requirement and for the limits of liability specified in such contractual requirement, if any, but in no event for insurance not afforded by the policy nor for limits of liability in excess of the applicable limits of liability of the policy. Business Interruption coverage is included as part of the All Risk Property form.
The existence of more than one insured, Additional Insured or other interests shall not serve to increase the limits of liability of the policy.

The Memorandum of Insurance serves solely to list insurance policies, limits and dates of coverage. Any modifications hereto are not authorized.

SEPARATION AGREEMENT AND RELEASE

This Separation Agreement and Release ("Agreement") is entered into by and between **Todd Edlund** ("Executive"), a resident of Minnesota, and Entegris, Inc., a Delaware corporation, with corporate headquarters located at 129 Concord Road, Billerica, Massachusetts 01821 ("Entegris"). It shall take effect after the rescission period described in Paragraph 6 has expired. The purpose of this Separation Agreement and Release is to set forth the compensation and benefits being offered to the Executive in connection with his retirement from employment with Entegris.

TERMS AND CONDITIONS

In consideration of the recitals stated above and the mutual promises made below, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Separation Date -- The last day of Executive's employment with Entegris shall be September 1, 2022 (the "Separation Date") as a result of Executive's retirement. Executive shall continue to receive his base salary, continue to be eligible to participate in Entegris' employee benefits, and continue to vest in any outstanding equity awards relating to shares of Entegris common stock through the Separation Date.
2. Separation Payments and Benefits -- Subject to and contingent upon Executive's continued employment through September 1, 2022 and Executive's execution of and compliance with the terms and conditions of this Agreement, and further provided that Executive does not revoke this Agreement as provided in Paragraph 6 below, Entegris shall provide Executive with the following benefits: (i) all outstanding, unvested restricted stock units relating to shares of Entegris common stock that are outstanding and held by Executive as of the Separation Date shall vest in full effective as of the Effective Date; (ii) all stock option award agreements relating to shares of Entegris common stock where such stock options or a portion thereof are held by Executive and are outstanding as of the Separation Date shall, effective as of the Effective Date, be amended in accordance with Exhibit A hereto (the "Omnibus Option Agreement Amendment"); and (iii) all performance-based restricted stock unit award agreements relating to shares of Entegris common stock where such performance-based restricted stock units or a portion thereof are held by Executive and are outstanding and unvested as of the Separation Date shall, effective as of the Effective Date, be amended in accordance with Exhibit B hereto (the "Omnibus PRSU Agreement Amendment"); provided, that such amendments shall apply only after giving effect to the proration provisions of sections 1.3 and 1.7 of the 2022 Stock Option Award Agreement and 2022 Performance-Based RSU Award Agreement, respectively, in each case, by and between the Company and Executive. For the avoidance of doubt, each such Entegris equity award shall remain outstanding for the period between the Separation Date and the Effective Date and, Executive revokes this Agreement as provided in Paragraph 6 below, then each such award shall be forfeited in accordance with its terms

In addition, notwithstanding Entegris' requirement that an employee must remain employed with Entegris on January 1, 2023, in order to be eligible to receive a discretionary award under the Entegris Incentive Plan for the 2022 fiscal year, Entegris will pay EMPLOYEE a pro-rata bonus for fiscal year 2022, less applicable taxes and withholdings. Such amount will be determined in Entegris' discretion based on Entegris' financial performance for 2022 pursuant to the Entegris Incentive Plan and will be pro-rated based on the number of days during fiscal year 2022 during which EMPLOYEE remained employed with Entegris. This pro-rata bonus will be paid at the same time that Entegris pays such bonuses to current Entegris employees, which Entegris anticipates will be in February 2023.

1. Accrued Payments -- Whether or not Executive signs this Agreement and it becomes effective in accordance with its terms, Executive will receive or be provided with the following: (a) Executive's base salary through the Separation Date to the extent not previously paid prior to the Separation Date, which will be paid to Executive on the first regularly scheduled payment date following the Separation Date; (b) those unvested restricted stock units relating to shares of Entegris common stock that were granted in 2022 and vest on a prorated basis in accordance with their terms as of September 1, 2022 and without regard to Section 2(i) above, which such awards will be settled in accordance with their terms; (c) exercisability of those unvested restricted stock options to acquire shares of Entegris common stock that were granted in 2022 and vest on a prorated basis in accordance with their terms as of September 1, 2022 and without regard to Section 2(ii) above; (d) those unvested performance-based restricted stock units relating to shares of Entegris common stock that were granted in 2022 and remain outstanding on a prorated basis in accordance with their terms as of September 1, 2022 and without regard to Section 2(ii) above and will vest or be forfeited in accordance with their terms at the end of the performance period; (e) reimbursement for any unreimbursed business expenses properly incurred by Executive in accordance with Entegris policy prior to the Separation Date and properly submitted for reimbursement within sixty (60) days following the Separation Date, which will be paid to Executive within thirty (30) days following such proper submission for reimbursement; and (f) such reimbursements and benefits under Entegris' benefit plans, if any, to which Executive became entitled prior to the Separation Date, as determined in accordance with Entegris' benefit plans and policies.

1. Release -- In exchange for the payments and benefits provided Executive under Paragraph 2 of this Agreement, which Executive acknowledges that he would not otherwise be entitled, on Executive's own behalf and that of his heirs, executors, administrators, beneficiaries, fiduciaries, personal representatives, successors and assigns (collectively, the "Releasors"), Executive hereby fully, forever, irrevocably and unconditionally releases, remises and discharges Entegris, together with each of its past, present and future affiliates, subsidiaries, parent companies, owners, predecessors, and successors, and all of their respective past, present and future officers, directors, stockholders, partners, members, employees, agents, trustees, investors, joint ventures, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (each, individually, a "Released Party" and, collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature whatsoever, whether known or unknown, in law or in equity, contingent or absolute (collectively, "Claims"), which Executive or any of the other Releasors ever had, now has or may hereafter claim to have by reason of any matter, cause, act, omission or thing whatsoever: (a) arising from the beginning of time through the date Executive executes this Agreement, including but not limited to, any such Claims (i) arising out of or relating in any way to Executive's employment with Entegris or any other Released

Party, (ii) arising out of or relating to tort, fraud or defamation, and (iii) arising under any federal, local, or state statute, regulation or ordinance, including without limitation, Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, as amended by the Older Workers Benefit Protection Act of 1990 ("ADEA"); the Civil Rights Act of 1866; the Americans with Disabilities Act; the Family and Medical Leave Act; the Fair Credit Reporting Act; the Genetic Information Nondiscrimination Act; Section 211 of the Energy Reorganization Act; the Employee Retirement Income Security Act of 1974; the Pregnancy Discrimination Act; the Equal Pay Act of 1963; the Minnesota Human Rights Act; the Minnesota Equal Pay for Equal Work Law; the Minnesota Whistleblower Act; the Minnesota Whistleblower Protection Laws; the Minnesota Parental Leave Act; the Massachusetts Fair Employment Practices Act; the Massachusetts Wage Act (Massachusetts law regarding payment of wages and overtime); the Massachusetts Civil Rights Act; the Massachusetts Sexual Harassment Statute; the Massachusetts Equal Rights Act; the Massachusetts Labor and Industries Act; Mass. Gen. Laws ch. 214, § 1B (Massachusetts right of privacy law); the Massachusetts Parental Leave Act; and the Massachusetts Small Necessities Leave Act; each as amended and including each of their respective implementing regulations and/or any other federal, state, local, or foreign law (statutory, regulatory, or otherwise) that may be legally waived or released; (b) arising out of or relating to the termination of Executive's employment; or (c) arising under or relating to any policy, agreement, understanding, or promise, written or oral, formal or informal, between Entegris or any other Released Party and Executive; provided, however, that, notwithstanding anything herein to the contrary, Releasors do not release, and this release and waiver does not apply to and shall not be construed to apply to: (A) any Claims Executive may have that cannot be waived under applicable law, such as the right to make a claim for unemployment or worker's compensation benefits; (B) rights under this Agreement; (C) Executive's right to challenge the validity of the release of ADEA claims set forth in this Agreement; [(D) any rights Executive may have to indemnification in Executive's capacity as a current or former officer of Entegris, if applicable;] or (E) any rights Executive may have to vested benefits under employee benefit plans.

1. Acknowledgement of Full Payment -- Executive acknowledges and agrees that the payments provided under Paragraph 3 of this Agreement (other than payment of expenses) are in complete satisfaction of any and all compensation and benefits due to Executive from Entegris or any other Release, whether for services provided to Entegris or any other Released Party, through the Separation Date and that, except as expressly provided under this Agreement, no further compensation is owed to Executive.
2. Review and Rescission Periods -- Executive acknowledges that he has been provided a period of up to twenty-one (21) days following the Separation Date in which to consider this Agreement. Executive may sign and return this Agreement before the expiration of the twenty-one (21)-day period following the Separation Date; **provided, however, that in no event may Executive execute this Agreement prior to the Separation Date**. Once this Agreement is executed, Executive may rescind the Agreement, within fifteen (15) calendar days following the date of signature. To be effective, any rescission within the relevant time period must be in writing and delivered to Entegris in care of the General Counsel. If sent by mail, any rescission must be postmarked within the relevant time period, must be properly addressed, and must be sent by certified mail, return receipt requested. The benefits described in Paragraph 2 shall not commence or be provided to

Executive until this Agreement becomes effective. If Executive rescinds Executive's consent within the relevant time period, this Agreement shall be of no force or effect and Executive shall have no right to the payments and benefits set forth in Paragraph 2. If Executive does not rescind this Agreement, then, at the expiration of such fifteen (15) day period, this Agreement will take effect as a legally-binding agreement between Executive and Entegris on the basis set forth above (such date, the "Effective Date").

3. Non-Admission -- Nothing in this Agreement, nor the furnishing of consideration for this Agreement, is intended to be nor will it be used as an admission of liability by either party that there has been any violation of state or federal law, employment practice or any other matter.
4. Confidentiality -- Executive acknowledges that the disclosure of any Confidential Information could cause irreparable harm to Entegris and its affiliates. Without limiting Paragraph 10 below, Executive agrees to maintain, at all times, the confidentiality of such Confidential Information and to not, directly or indirectly, use for Executive's own purpose or benefit, or for the benefit of any other person or entity, the Confidential Information or otherwise disclose, furnish or publish any Confidential Information. For purposes of this Agreement, "Confidential Information" means all information of Entegris or its affiliates, whether written or oral, tangible or intangible, of a private, secret, proprietary or confidential nature, including, without limitation, all non-public data, information, matters and materials of or concerning Entegris and its affiliates, their businesses, operations, finances, employees, and technology, including, without limitation, any data, compositions, customer lists, equipment, formulae, know-how, method of manufacture, materials, process, records, specifications, supplier names, test methodologies, technology, pricing information, business plans and strategies, marketing information, the terms or structures of Entegris' or its affiliates' contracts and agreements with customers and suppliers, trade secrets, and all other information which is not generally known to the public.
5. Non-Disparagement -- Without limiting Paragraph 10 below, Executive agrees that Executive will not, in public or private, make any false, disparaging, derogatory or defamatory statements, whether online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of Entegris or its affiliates, regarding Entegris or any of the other Released Parties, or regarding the Entegris' business affairs, business prospects, or financial condition.
6. Permitted Disclosures -- Regardless of whether or not this Agreement becomes binding, nothing in this Agreement or in any other agreement Executive may have with Entegris or any of its affiliates prohibits Executive from communicating with any federal, state or local governmental agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies or participating in or cooperating with any governmental agency investigations, inquiries or proceedings. Executive is not required to notify Entegris of any such communications; provided, however, that nothing herein authorizes the disclosure of information Executive obtained through any communication that was subject to the attorney-client privilege. Further, notwithstanding Executive's confidentiality and nondisclosure obligations, Executive is hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a

Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

7. Return of Entegris Documents and Other Property -- In signing this Agreement, Executive represents and warrants that, as of the Separation Date, Executive has returned to Entegris any and all documents, materials and information (whether in hardcopy, on electronic media or otherwise) related to business of Entegris or any of its affiliates and all keys, access cards, credit cards, laptops, computer hardware and software, storage devices (flash drives, thumb drives, etc.), tablets, smartphones, telephones and telephone-related equipment and all other property of Entegris and its affiliates in his/her possession or control. Further, Executive represents and warrants that Executive has not retained any copy of any documents, materials or information of Entegris or any of its affiliates (whether in hardcopy, on electronic media or otherwise). Recognizing that his employment with Entegris has ended, Executive agrees that Executive will not, for any purpose, attempt to access or use any Entegris computer or computer network or system. Further, Executive acknowledges that he has disclosed to Entegris all passwords necessary or desirable to enable Entegris to access all information which Executive has password-protected on any of its computer equipment or on its computer network or system.
8. Non-Compete and Non-Solicit -- Executive acknowledges that during the course of employment with Entegris, Executive had access to Confidential Information, which, if disclosed, would assist in competition against Entegris and its affiliates, and, in further consideration of the payments and benefits provided to Executive in Paragraph 2, agrees to the following restrictions to protect the goodwill, Confidential Information and other legitimate interests of Entegris and its affiliates:
    a. Executive agrees that, while any performance restricted stock units or stock options previously granted to Executive remain unvested and for the one (1) year period following February 2, 2025 (the last date on which any then-unvested performance restricted stock units and stock options will vest) (the "Restricted Period"), Executive will not, directly or indirectly, either as principal, agent, employee, consultant, officer, director, stockholder, lender or in any other capacity, undertake planning or preparation for, engage in, or have a financial interest in, any business which is or would be competitive, directly or indirectly, with the current business or planned business of Entegris or any of its affiliates; provided, however, that [nothing contained in this Agreement shall preclude Executive from rendering advice or providing services to, whether as a principal, agent, employee, consultant, officer, director, stockholder, lender or in any other capacity, an entity engaged or planning to engage in any business which is or would be competitive, directly or indirectly, with the current business or planned business of Entegris or any of its affiliates so long as such relationship is restricted solely to one or more distinct portions of the operations and businesses of such entity and such distinct portions do not engage in and/or are not planning to engage in any business which is or would be competitive, directly

or indirectly, with the current business or planned business of Entegris or any of its affiliates, and Executive does not have any discussions with, or participate in, the governance, strategy, development, management or operations of any business segments that engaged in and/or planning to engage in any business which is or would be competitive, directly or indirectly, with the current business or planned business of Entegris or any of its affiliates; provided, further, that nothing contained in this Agreement shall preclude Executive from purchasing or owning less than one percent (1%) of the stock or other securities of any company with securities traded on a nationally recognized securities exchange.

b. Executive agrees that, during the Restricted Period, Executive will not, directly or indirectly, either as principal, agent, employee, consultant, officer, director, stockholder, lender or in any other capacity (i) contact, solicit or otherwise engage in any discussion with any employee, consultant, independent contractor, or agent of Entegris or its affiliates with the intention or effect of encouraging or inducing such party to terminate his or her employment, engagement, agency or other relationship, as applicable, with Entegris or any of its affiliates, or otherwise hire, engage or employ any such employee, consultant, independent contractor or agent of Entegris or its affiliates; or (ii) contact, solicit or otherwise engage in any discussion with any client, customer, account, supplier, licensor or licensee of Entegris or its affiliates, with the intention or effect of encouraging such party to terminate or reduce the volume of its business with Entegris or any of its affiliates or to place elsewhere any portion of its business that could be served by Entegris or any of its affiliates.

c. As used in this Paragraph 12, the term "client," "customer," or "account" shall include: (i) any person or entity that is a client, customer or account (has an established business arrangement with Entegris or its affiliates) of Entegris or its affiliates as of the date of this Agreement with whom or which Executive had material contact; [(ii) any person or entity with whom or which Executive had material contact that was a client, customer or account of Entegris or its affiliates at any time during the one-year period preceding the Separation Date; and (iii) any prospective client, customer or account to whom or which Entegris or any of its affiliates has made a pitch, presentation (or similar offering of services) and with whom or which Executive had material contact within a period of 180 days preceding the Separation Date.

d. The non-compete and non-solicit covenants set forth in this Paragraph 12 are limited to those geographies where Executive had a material presence or influence during the last twenty four (24) months of employment with Entegris and its affiliates. However, because Entegris and its affiliates offer products for sale on a nationwide and international basis, Executive recognizes that the business of Entegris and its affiliates is not restricted by geography. Accordingly, Executive agrees that it is fair and reasonable that the non-compete and non-solicit covenants set forth in this Paragraph 12 apply nationally or internationally, to the extent Executive had a material presence or influence nationally or internationally during the last twenty four (24) months of employment.

9. Breach -- In the event of a breach of any lawful provision of the Agreement by Executive, Entegris will be entitled to cease making any payments or providing any benefits described in Paragraph 2 and to terminate any unvested performance restricted stock units and stock options, in addition to any and all other rights or remedies Entegris may

have at law or in equity (including, with respect to a breach of Paragraphs 8, 9 or 12, injunctive relief); provided, however, that for purposes of this Paragraph 13, Executive's challenge to the validity of an ADEA waiver shall not constitute a breach of this Agreement.

10. Governing Law and Venue -- This Agreement will be construed and interpreted in accordance with the laws of the State of Minnesota and may be pleaded as a full and complete defense to any action, suit, or proceeding relating to Executive's employment with Entegris. For purposes of litigating any dispute that arises out of this Agreement, such disputes shall be brought in Ramsey County or Hennepin County, Minnesota.
11. Other Provisions -- A waiver of any breach of or failure to comply fully with any provision of this Agreement by either party shall not operate or be construed as a waiver of any subsequent breach thereof or failure to comply. If any portion or provision of this Agreement shall to any extent be deemed invalid or unenforceable, the remainder of this Agreement shall not be affected thereby and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law. To avoid any possible misunderstanding, Entegris intends this Agreement to be a comprehensive statement of the terms of Executive's retirement. This Agreement supersedes any prior understanding or statement made to Executive by Entegris regarding arrangements with Entegris for the period after Executive's separation. Any modifications of the terms set forth in this Agreement must be in writing and signed by Executive and an authorized officer of Entegris.
12. Resignation; Entegris Affiliation -- Executive hereby resigns from all positions and offices held by Executive with Entegris and its affiliates effective as of the Separation Date and agrees to execute all such other documents and form in connection with Executive's resignation as may be requested by Entegris. Executive agrees that, following the Separation Date, Executive will not hold himself/herself out as an officer, employee, or otherwise as a representative of Entegris.
13. Cooperation -- Executive agrees that, to the extent permitted by law, Executive shall cooperate fully with Entegris in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against Entegris by a third party or by or on behalf of Entegris against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator. Executive's full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with Entegris' counsel, at reasonable times and locations designated by Entegris, to investigate or prepare Entegris' claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by Entegris. Executive further agrees that, to the extent permitted by law, Executive will notify Entegris promptly in the event that Executive is served with a subpoena (other than a subpoena issued by a government agency), or in the event that Executive is asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against Entegris.
14. Voluntary Assent -- **This Agreement, including the release of claims set forth above, creates legally binding obligations and Entegris advises Executive to consult an attorney before signing this Agreement.** In signing this Agreement, Executive gives Entegris assurance that Executive has signed it voluntarily and with a full understanding of its terms; that Executive has had sufficient opportunity, before signing this

Agreement, to consider its terms and has been advised to consult with an attorney, if Executive wished to do so, and that, in signing this Agreement, Executive has not relied on any promises or representations, express or implied, that are not set forth expressly in this Agreement.

15. Tax Acknowledgment -- In connection with the benefits provided to Executive pursuant to this Agreement, Entegris shall withhold and remit to the tax authorities the amounts required or permitted under applicable law, and Executive shall be responsible for all applicable taxes with respect to such benefits under applicable law. Executive acknowledges that he is not relying upon the advice or representation of Entegris with respect to the tax treatment of any of the benefits set forth in this Agreement.

16. Expiration -- This Agreement must be signed and returned to Entegris no later than September 22, 2022, but no earlier than the Separation Date. If Executive does not sign and return the Agreement by such date, the Agreement shall expire and be null and void.

[*The remainder of the page has intentionally been left blank.*]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the dates indicated below with the understanding it is to take effect when signed by both parties.

Date: ______________________ ______________________________

Todd Edlund

ENTEGRIS, INC.

Date: ______________________ By ______________________________

Susan Rice

Title: SVP, Global Human Resources

<u>Exhibit A</u>

OMNIBUS OPTION AMENDMENT AGREEMENT

THIS OMNIBUS OPTION AMENDMENT AGREEMENT is by and between Entegris, Inc., a Delaware corporation (the "<u>Company</u>"), and Todd Edlund ("Participant" and, together with the Company, the "<u>Parties</u>"). Capitalized terms used but not defined herein shall have the meaning ascribed to them in Participant's Stock Option Award Agreements, dated as of [●], by and between the Parties (the "<u>Option Award Agreements</u>").

RECITALS

WHEREAS, the Parties entered into the Separation Agreement and Release, dated as of [●], 2022, to which this Omnibus Option Amendment Agreement is attached as Exhibit A (the "<u>Separation Agreement</u>");

WHEREAS, the Parties previously entered into the Option Award Agreements; and

WHEREAS, in accordance with Paragraph 2 of the Separation Agreement, the Parties desire to amend the Option Award Agreements as set forth herein and effective as of the Effective Date (as defined in the Separation Agreement).

NOW, **THEREFORE**, in consideration of the premises and mutual covenants herein contained, the Parties agree as follows:

1. Effective as of the Effective Date, Section 2.3 of the Option Award Agreements (Retirement) are hereby deleted in its entirety and replaced as follows:

2.3 *Retirement*. Notwithstanding any provision to the contrary in Section 2.2 above, if Participant is an employee of the Company or an Affiliate and ceases to be an employee due to Retirement then, to the extent that Participant continues to comply with and does not violate the terms of the Separation Agreement, the Option will continue to vest in accordance with the schedule specified in Section 1.3 above as if Participant continued in the employment of or service with the Company or an Affiliate and such Options will be exercisable until the earlier to occur of (A) four (4) years following the date of Retirement and (B) the original expiration date specified in Section 1.4 above. Determination as to whether Participant complies with and has not violated the terms of the Restrictive Covenant Agreement will be made in good faith by the Company.

For purposes of this Award, "Retirement" means Participant's employment, tenure or service, as applicable, with the Company and its Affiliates is terminated after (x) Participant has provided at least five (5) years of consecutive years of service with the Company or an Affiliate thereof, (y) Participant is at least fifty-five (55) years old as of the date of Retirement, and (z) Participant's age plus complete years of service with the Company or an Affiliate thereof as of Participant's date of termination equals at least seventy (70).

1. Sections 2.4-2.13 of the Option Award Agreements are incorporated herein by reference *mutatis mutandis*. Except as amended hereby, the Option Award Agreements shall remain in full effect in accordance with their terms and are hereby ratified and confirmed in all respects.

Exhibit B

OMNIBUS PRSU AGREEMENT AMENDMENT

THIS OMNIBUS PRUS AGREEMENT AMENDMENT is by and between Entegris, Inc., a Delaware corporation (the "Company"), and Todd Edlund ("Participant" and, together with the Company, the "Parties"). Capitalized terms used but not defined herein shall have the meaning ascribed to them in Participant's Performance-Based RSU Award Agreement, dated as of [●], by and between the Parties (the "PRSU Award Agreements").

RECITALS

WHEREAS, the Parties entered into the Separation Agreement and Release, dated as of [●], 2022, to which this Omnibus PRSU Agreement Amendment is attached as Exhibit B (the "Separation Agreement");

WHEREAS, the Parties previously entered into the PRSU Award Agreements; and

WHEREAS, in accordance with Paragraph 2 of the Separation Agreement, the Parties desire to amend the PRSU Award Agreements as set forth herein and effective as of the Effective Date (as defined in the Separation Agreement).

NOW, **THEREFORE**, in consideration of the premises and mutual covenants herein contained, the Parties agree as follows:

1. Effective as of the Effective Date, Section 1.7(i) of the PRSU Award Agreements (Early Vesting of PRSUs) are hereby deleted in its entirety and replaced as follows:

(i) If, prior to a Change in Control, the Participant dies, incurs a total and permanent disability (as that term is defined in the Company's disability insurance policy in effect on the Award Date), or ceases to be an employee due to Retirement (subject to compliance with the Retirement Vesting Criteria) prior to the Maturity Date, he or she shall continue to be entitled to receive the Earned PRSUs hereunder (without proration), to the extent earned as of the earlier of the Maturity Date and the date of a Change in Control. To the extent the PRSU becomes an Earned PRSU as of the date of a Change in Control, the applicable level of performance shall be calculated in accordance with clause (ii) below, and such resulting prorated number of Earned PRSUs shall be fully vested and shall be settled in accordance with the last sentence of this Section 1.7(i).

1. Effective as of the Effective Date, Section 1.7 of the Award Agreement (Early Vesting of PRSUs) is hereby amended by adding the following at the end of such Section:

For purposes of this Award, "Retirement Vesting Criteria" means that Participant continues to comply with and does not violate the terms of the Restrictive Covenant Agreement through the earlier to occur of the Maturity Date and a Change in Control. Determination as to whether Participant complies with and has not violated the terms of the Separation Date will be made in good faith by the Company.

For purposes of this Award, "Retirement" means Participant's employment, tenure or service, as applicable, with the Company and its Affiliates is terminated after (x) Participant has provided at least five (5) years of consecutive years of service with the Company or an Affiliate thereof, (y) Participant is at least fifty-five (55) years old as of the date of Retirement, and (z) Participant's age plus complete years of service with the Company or an Affiliate thereof as of Participant's date of termination equals at least seventy (70).

1. Article II of the PRSU Award Agreements are incorporated herein by reference *mutatis mutandis*. Except as amended hereby, the PRSU Award Agreements shall remain in full effect in accordance with their terms and are hereby ratified and confirmed in all respects.

Exhibit 31.1

CERTIFICATIONS

I, Bertrand Loy, certify that:

1. I have reviewed this Report on Form 10-Q of Entegris, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects, the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 2, 2022

/s/ Bertrand Loy

Bertrand Loy
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Gregory B. Graves, certify that:

1. I have reviewed this Report on Form 10-Q of Entegris, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects, the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 2, 2022

/s/ Gregory B. Graves

Gregory B. Graves
Chief Financial Officer
(Principal Financial Officer)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q (the “Report”) of Entegris, Inc, a Delaware corporation (the “Company”), for the period ended October 1, 2022 as filed with the Securities and Exchange Commission on the date hereof, Bertrand Loy, President and Chief Executive Officer of the Company, and Gregory B. Graves, Chief Financial Officer of the Company, each hereby certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 2, 2022

/s/ Bertrand Loy
Bertrand Loy
Chief Executive Officer

/s/ Gregory B. Graves
Gregory B. Graves
Chief Financial Officer