LYDALL INC /DE/
Form 10-Q
October 31, 2017

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

FORM 10-Q

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

For the quarterly period ended September 30, 2017

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: 1-7665

LYDALL, INC.
(Exact name of registrant as specified in its charter)

Delaware	06-0865505
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
One Colonial Road, Manchester, Connecticut	06042
(Address of principal executive offices)	(zip code)

(860) 646-1233
(Registrant’s telephone number, including area code)
None
(Former name, former address and former fiscal year, if changed since last report)

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 a 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 ýNo ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes ýNo ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 ýAccelerated filer ¨Non-accelerated filer (Do not check if a smaller reporting company) ¨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 ý

Indicate the number of shares outstanding of each of the issuer’s classes of common stock, as of the latest practicable date.

Common Stock $ .01 par value per share.
Total Shares outstanding October 17 , 2017 17,241,883

LYDALL, INC.
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Lydall, Inc. and its subsidiaries are hereafter collectively referred to as “Lydall,” the “Company” or the “Registrant.” Lydall and its subsidiaries’ names, abbreviations thereof, logos, and product and service designators are all either the registered or unregistered trademarks or trade names of Lydall and its subsidiaries.

CAUTIONARY NOTE CONCERNING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains “forward-looking statements” within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Any statements contained in this Quarterly Report on Form 10-Q that are not statements of historical fact may be deemed to be forward-looking statements. All such forward-looking statements are intended to provide management’s current expectations for the future operating and financial performance of the Company based on current assumptions relating to the Company’s business, the economy and future conditions. Forward-looking statements generally can be identified through the use of words such as “believes,” “anticipates,” “may,” “should,” “will,” “plans,” “projects,” “expects,” “expectations,” “estimates,” “forecasts,” “pre “prospects,” “strategy,” “signs” and other words of similar meaning in connection with the discussion of future operating or financial performance. Forward-looking statements may include, among other things, statements relating to future sales, earnings, cash flow, results of operations, uses of cash and other measures of financial performance. Because forward-looking statements relate to the future, they are subject to inherent risks, uncertainties and changes in circumstances that are difficult to predict. Accordingly, the Company’s actual results may differ materially from those contemplated by the forward-looking statements. Investors, therefore, are cautioned against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. Forward-looking statements in this Quarterly Report on Form 10-Q include, among others, statements relating to:

- Overall economic and business conditions and the effects on the Company’s markets;
- Outlook for the fourth quarter of 2017;
- Expected vehicle production in the North American, European or Asian markets;
- Growth opportunities in markets served by the Company;
- Expected future financial and operating performance of Texel and Gutsche;
- Ability to integrate the Texel and Gutsche businesses;
- Expected costs and future savings associated with restructuring programs and the planned combination of the Thermal/Acoustical Metals and Thermal/Acoustical Fibers segments into the Lydall Thermal Acoustical Solutions segment;
- Expected gross margin, operating margin and working capital improvements from the application of Lean Six Sigma;
- Product development and new business opportunities;
- Future strategic transactions, including but not limited to: acquisitions, joint ventures, alliances, licensing agreements and divestitures;
- Pension plan funding;
- Future cash flow and uses of cash;
- Future amounts of stock-based compensation expense;
- Future earnings and other measurements of financial performance;
- Ability to meet cash operating requirements;
- Future levels of indebtedness and capital spending;
- Ability to meet financial covenants in the Company's amended revolving credit facility;
- Future impact of the variability of interest rates and foreign currency exchange rates;
- Expected future impact of recently issued accounting pronouncements upon adoption;
- Future effective income tax rates and realization of deferred tax assets;
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- Estimates of fair values of reporting units and long-lived assets used in assessing goodwill and long-lived assets for possible impairment; and
- The expected outcomes of legal proceedings and other contingencies, including environmental matters.

All forward-looking statements are inherently subject to a number of risks and uncertainties that could cause the actual results of the Company to differ materially from those reflected in forward-looking statements made in this Quarterly Report on Form 10-Q, as well as in press releases and other statements made from time to time by the Company's authorized officers. Such risks and

uncertainties include, among others, worldwide economic cycles and political changes and uncertainties that affect the markets which the Company's businesses serve, which could have an effect on demand for the Company's products and impact the Company's profitability; challenges encountered by the Company in the integration of the Texel and Gutsche acquisitions, including execution of restructuring programs; challenges encountered in the combination of the Thermal/Acoustical Fibers and Thermal/Acoustical Metals business segments; disruptions in the global credit and financial markets, including diminished liquidity and credit availability; changes in international trade agreements including tariff regulation and trade restrictions; swings in consumer confidence and spending; unstable economic growth; volatility in foreign currency exchange rates; raw material pricing and supply issues; fluctuations in unemployment rates; retention of key employees; increases in fuel prices; and outcomes of legal proceedings, claims and investigations, as well as other risks and uncertainties identified in Part II, Item 1A - Risk Factors of this Quarterly Report on Form 10-Q, and Part I, Item 1A - Risk Factors of Lydall's Annual Report on Form 10-K for the year ended December 31, 2016. The Company does not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

LYDALL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(In Thousands Except Per Share Data)

	Quarter Ended September 30,	
	2017	2016
	(Unaudited)	
Net sales	$180,041	$155,725
Cost of sales	140,061	117,532
Gross profit	39,980	38,193
Selling, product development and administrative expenses	24,819	19,896
Operating income	15,161	18,297
Interest expense	705	389
Other expense (income), net	408	(218)
Income before income taxes	14,048	18,126
Income tax expense	3,404	5,392
Income from equity method investment	(31)	(51)
Net income	$10,675	$12,785
Earnings per share:		
Basic	$0.63	$0.76
Diluted	$0.62	$0.75
Weighted average number of common shares outstanding:		
Basic	17,055	16,888
Diluted	17,267	17,138

See accompanying Notes to Condensed Consolidated Financial Statements.

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LYDALL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(In Thousands Except Per Share Data)

	Nine Months Ended September 30,	
	2017	2016
	(Unaudited)	
Net sales	$520,407	$422,660
Cost of sales	396,750	316,100
Gross profit	123,657	106,560
Selling, product development and administrative expenses	73,697	59,062
Operating income	49,960	47,498
Interest expense	2,106	643
Other expense (income), net	1,147	(884)
Income before income taxes	46,707	47,739
Income tax expense	11,201	15,023
Loss (income) from equity method investment	37	(51)
Net income	$35,469	$32,767
Earnings per share:		
Basic	$2.08	$1.94
Diluted	$2.05	$1.92
Weighted average number of common shares outstanding:		
Basic	17,028	16,859
Diluted	17,270	17,084

See accompanying Notes to Condensed Consolidated Financial Statements.

LYDALL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands)

	Quarter Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(Unaudited)		(Unaudited)	
Net income	$10,675	$12,785	$35,469	$32,767
Other comprehensive income:				
Foreign currency translation adjustments	9,438	(1,056)	23,951	(2,324)
Pension liability adjustment, net of tax	172	142	516	427
Unrealized gain/(loss) on hedging activities, net of tax	37	—	(7)	—
Comprehensive income	$20,322	$11,871	$59,929	$30,870

See accompanying Notes to Condensed Consolidated Financial Statements.

LYDALL, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In Thousands)

	September 30, 2017 (Unaudited)	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$64,706	$ 71,934
Accounts receivable, less allowances (2017 - $1,406; 2016 - $1,429)	120,606	103,316
Inventories	80,685	66,146
Taxes receivable	6,724	3,883
Prepaid expenses	3,439	4,085
Other current assets	6,505	6,242
Total current assets	282,665	255,606
Property, plant and equipment, at cost	386,383	359,961
Accumulated depreciation	(220,995)	(199,166)
Net, property, plant and equipment	165,388	160,795
Goodwill	68,777	63,606
Other intangible assets, net	41,538	41,447
Other assets, net	7,136	5,575
Total assets	$565,504	$ 527,029
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	$257	$ 634
Accounts payable	72,505	56,346
Accrued payroll and other compensation	16,862	14,016
Accrued taxes	4,088	6,460
Other accrued liabilities	12,249	12,988
Total current liabilities	105,961	90,444
Long-term debt	92,993	128,141
Deferred tax liabilities	16,918	15,849
Benefit plan liabilities	11,104	14,729
Other long-term liabilities	4,192	4,410
Commitments and Contingencies (Note 14)		
Stockholders' equity:		
Preferred stock	—	—
Common stock	249	249
Capital in excess of par value	85,930	82,387
Retained earnings	360,935	325,466
Accumulated other comprehensive loss	(23,490)	(47,950)
Treasury stock, at cost	(89,288)	(86,696)
Total stockholders' equity	334,336	273,456
Total liabilities and stockholders' equity	$565,504	$ 527,029

See accompanying Notes to Condensed Consolidated Financial Statements.

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LYDALL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands)

	Nine Months Ended September 30,	
	2017	2016
	(Unaudited)	
Cash flows from operating activities:		
Net income	$35,469	$32,767
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	19,386	14,064
Long-lived asset impairment charge	772	—
Inventory step-up amortization	1,108	1,607
Deferred income taxes	(466)	(719)
Stock-based compensation	3,240	3,070
Income (Loss) from equity method investment	37	(51)
Changes in operating assets and liabilities:		
Accounts receivable	(12,138)	(15,380)
Inventories	(11,795)	(150)
Accounts payable	18,071	10,930
Accrued payroll and other compensation	2,044	2,652
Accrued taxes	(2,826)	2,096
Other, net	(6,710)	(3,464)
Net cash provided by operating activities	46,192	47,422
Cash flows from investing activities:		
Business acquisitions, net of cash acquired	(335)	(101,099)
Capital expenditures	(19,918)	(19,032)
Net cash used for investing activities	(20,253)	(120,131)
Cash flows from financing activities:		
Proceeds from borrowings	—	85,000
Debt repayments	(35,674)	(10,320)
Common stock issued	409	611
Common stock repurchased	(2,592)	(809)
Net cash (used for) provided by financing activities	(37,857)	74,482
Effect of exchange rate changes on cash	4,690	(565)
(Decrease) Increase in cash and cash equivalents	(7,228)	1,208
Cash and cash equivalents at beginning of period	71,934	75,909
Cash and cash equivalents at end of period	$64,706	$77,117

Non-cash capital expenditures of $3.6 million and $4.2 million were included in accounts payable at September 30, 2017 and 2016, respectively.

See accompanying Notes to Condensed Consolidated Financial Statements.

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LYDALL, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Basis of Financial Statement Presentation

Description of Business

Lydall, Inc. and its subsidiaries (the “Company” or “Lydall”) design and manufacture specialty engineered nonwoven filtration media, industrial thermal insulating solutions, and thermal and acoustical barriers for filtration/separation and heat abatement and sound dampening applications.

On July 7, 2016, the Company completed an acquisition of the nonwoven and coating materials businesses primarily operating under the Texel (“Texel”) brand from ADS, Inc. (“ADS”), a Canadian based corporation. The Texel operations manufacture nonwoven needle punch materials and predominantly serve the geosynthetic, liquid filtration, and other industrial markets. The acquired businesses are included in the Company's Technical Nonwovens reporting segment.

On December 31, 2016, the Company completed an acquisition of the nonwoven needle punch materials businesses, operating under the Gutsche (“Gutsche”) brand, a German based corporation. The Gutsche operations manufacture nonwoven needle punch materials and predominantly serve the industrial filtration and high performance nonwoven markets. The acquired businesses are included in the Company's Technical Nonwovens reporting segment.

Basis of Presentation

The accompanying Condensed Consolidated Financial Statements include the accounts of Lydall, Inc. and its subsidiaries. All financial information is unaudited for the interim periods reported. All significant intercompany transactions have been eliminated in the Condensed Consolidated Financial Statements. The Condensed Consolidated Financial Statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”). The operating results of Texel and Gutsche have been included in the Consolidated Statements of Operations beginning on their respective dates of acquisition. As part of the acquisition of Texel, the Company acquired a fifty percent interest in a joint venture, Afitex Texel Geosynthetiques Inc., which is accounted for under the equity method of accounting. The year-end Condensed Consolidated Balance Sheet was derived from the December 31, 2016 audited financial statements, but does not include all disclosures required by accounting principles generally accepted in the United States of America. Management believes that all adjustments, which include only normal recurring adjustments necessary for a fair statement of the Company’s condensed consolidated financial position, results of operations and cash flows for the periods reported, have been included. For further information, refer to the audited consolidated financial statements and accompanying notes included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2016.

Recent Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, “Revenue from Contracts with Customers (Topic 606)." The objective of this standard update is to remove inconsistent practices with regard to revenue recognition between US GAAP and IFRS. The standard intends to improve comparability of revenue recognition practices across entities, industries, jurisdictions and capital markets. ASU 2014-09 is effective for the Company’s interim and annual reporting periods beginning January 1, 2018, and is to be adopted using either a full retrospective or modified retrospective transition method with early adoption permitted for annual periods beginning after December 15, 2016. The Company anticipates adopting ASU 2014-09 under the modified retrospective transition method, with the cumulative effect of

initially adopting this standard recognized through retained earnings at the date of adoption.
The new standard requires new comprehensive qualitative and quantitative disclosures relating to the nature, amount, timing and uncertainty of revenue arising from contracts with customers, including significant judgments and estimates used when applying the guidance.
The Company is executing a project plan that includes a phased approach to implementing ASU 2014-09. During the remainder of 2017, the Company is completing the second phase which includes conversion activities, such as establishing policies, identifying system impacts, integration of the standard update into financial reporting processes and systems, and developing an understanding of the financial impact of this standard on the Company's consolidated financial statements, including the cumulative effect adjustment to be recorded upon implementation of this standard
The Company continues to assess potential impacts to all of its segments under the new standard and has identified a potential impact to the timing of revenue recognition across all segments. The Company currently generally recognizes revenue at a point in time typically when products are shipped and risk of loss has transferred to the customer, whereas the implementation of the new standard will result in certain revenue streams moving to an over-time revenue recognition model. Under the new standard, the customized nature of some of our products combined with

contractual provisions that provide us with an enforceable right to payment will likely require the Company to recognize revenue related to certain revenue streams prior to the product being shipped to the customer. The Company anticipates the transition to the new standard will result in changes to revenue recognition practices, including areas described above, but the Company will be unable to quantify that impact until the second phase of the project has been completed.
Subsequent to the issuance of ASU No. 2014-09, the FASB has issued the following update; ASU No. 2016-20, “Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers”. The amendments in this update affects the guidance contained within ASU 2014-09 and will be assessed as part of the Company's revenue recognition project plan.
In July 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2015-11, “Inventory” (Topic 330): Simplifying the Measurement of Inventory." This ASU requires an entity to measure inventory at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. Subsequent measurement is unchanged for inventory measured using last-in, first-out (“LIFO”) or the retail inventory method. This ASU is effective for fiscal years beginning after December 15, 2016. The adoption of this ASU did not have any impact on the Company’s consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)". This ASU requires entities that lease assets with lease terms of more than 12 months to recognize right-of-use assets and lease liabilities created by those leases on their balance sheets. This ASU will also require new qualitative and quantitative disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. This ASU is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. The Company is currently evaluating the method and impact the adoption of ASU 2016-02 will have on the Company’s consolidated financial statements and disclosures.

In May 2017, the FASB issued ASU No. 2017-09, "Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting". This ASU requires an entity to apply modification accounting in Topic 718 when there are changes to the terms or conditions of a share-based payment award, unless the fair value, vesting conditions, and classification of the modified award are the same as the original award immediately before the original award is modified. This ASU is effective for fiscal years beginning after December 15, 2017, with early adoption permitted. The Company is currently evaluating the method and impact the adoption of ASU 2017-09 will have on the Company’s consolidated financial statements and disclosures.

In August 2017, the FASB issued ASU No. 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Account for Hedging Activities". This ASU provides various improvements revolving around the financial reporting of hedging relationships that will require an entity to amend the presentation and disclosure of hedging activities to better portray the economic results of an entity's risk management activities in its financial statements. This ASU will also require an entity with cash flow and net investment hedges existing at the date of the adoption to apply a cumulative-effect adjustment related to eliminating the separate measurement of ineffectiveness to accumulated other comprehensive income with a corresponding adjustment to the opening balance of retained earnings as of the beginning of the fiscal year that the entity adopts this ASU. This ASU is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. The Company is currently evaluating the method and impact the adoption of ASU 2017-12 will have on the Company’s consolidated financial statements and disclosures.

2. Acquisitions

On December 31, 2016, the Company completed an acquisition of the nonwoven needle punch materials businesses, which include MGF Gutsche & Co GmbH KG, FRG and Gutsche Environmental Technology (Yixing) Co. Ltd., China, operating under Gutsche ("Gutsche"), a German based corporation. The Gutsche operations manufacture nonwoven needle punch materials and predominantly serve the industrial filtration and high performance nonwoven markets. The Company acquired one hundred percent of Gutsche for $57.6 million, net of a receivable of $3.0 million related to an estimated post-closing purchase price adjustment. In the second quarter of 2017, the Company finalized the post closing adjustment resulting in an increase in the purchase price of $0.4 million resulting in a final purchase price of $58.0 million. The purchase price was financed with a combination of cash on hand and $31.6 million of borrowings from the Company's amended $175 million credit facility. The assets and liabilities of Gutsche have been included in the Consolidated Balance Sheet at December 31, 2016. The acquired businesses are included in the Company's Technical Nonwovens reporting segment.

For the quarter ended September 30, 2017, Gutsche reported net sales and operating income of $13.9 million and $1.2 million, respectively. Operating income for the quarter ended September 30, 2017 included $0.1 million of purchase accounting inventory fair value step-up adjustments in cost of sales upon the sale of inventory. There were no sales or operating income for Gutsche during the quarter ended September 30, 2016 as the acquisition occurred on December 31, 2016.

For the nine months ended September 30, 2017, Gutsche reported net sales and operating income of $37.2 million and $2.1 million, respectively. Operating income for the nine months ended September 30, 2017 included $0.6 million of purchase accounting inventory fair value step-up adjustments in cost of sales upon the sale of inventory and $0.1 million of restructuring expenses.

There were no sales or operating income for Gutsche during the nine months ended September 30, 2016 as the acquisition occurred on December 31, 2016.

On July 7, 2016, the Company completed an acquisition of the nonwoven and coating materials businesses primarily operating under Texel from ADS, a Canadian based corporation. The Texel operations manufacture nonwoven needle punch materials and predominantly serve the geosynthetic, liquid filtration, and other industrial markets. The Company acquired one hundred percent of Texel for $102.7 million in cash, including a post-closing working capital adjustment. The purchase price was financed with a combination of cash on hand and $85.0 million of borrowings from the Company’s amended $175 million credit facility. As part of the acquisition, the Company acquired a fifty percent interest in a joint venture, Afitex Texel Geosynthetiques, Inc., with a fair value of $0.6 million. The joint venture is accounted for under the equity method of accounting. The operating results of the Texel business are reported within the Technical Nonwovens segment.

For the quarter ended September 30, 2017, Texel reported net sales and operating income of $26.5 million and $3.2 million, respectively. For the quarter ended September 30, 2016, Texel reported net sales and operating income of $23.2 million and $1.7 million, respectively. Operating income for the quarter ended September 30, 2016 included $1.6 million of purchase accounting inventory fair value step-up adjustments in cost of sales upon the sale of inventory.

For the nine months ended September 30, 2017, Texel reported net sales and operating income of $62.3 million and $5.1 million, respectively. Operating income for the nine months ended September 30, 2017 included $0.5 million of purchase accounting inventory fair value step-up adjustments in cost of sales upon the sale of inventory. For the nine months ended September 30, 2016, Texel reported net sales and operating income of $23.2 million and $1.7 million, respectively. Operating income for the nine months ended September 30, 2016 included $1.6 million of purchase accounting inventory fair value step-up adjustments in cost of sales upon the sale of inventory.

The following table summarizes the fair values of identifiable assets acquired and liabilities assumed at the date of the acquisitions:

In thousands	Texel	Gutsche
Cash and cash equivalents	$1,610	$9,400
Accounts receivable	13,355	7,736
Inventories	17,525	6,417
Prepaid expenses and other current assets	2,469	1,125
Non-current environmental indemnification receivable (Note 14)	925	—
Property, plant and equipment, net	31,525	7,969
Investment in joint venture	616	—
Goodwill (Note 4)	28,655	19,729
Other intangible assets, net (Note 4)	22,887	15,622
Other long term assets	—	1,545
Total assets acquired	$119,567	$69,543
Current liabilities	$(8,520)	$(8,376)
Long-term environmental remediation liability (Note 14)	(925)	—
Deferred tax liabilities	(7,413)	(470)
Other long-term liabilities	—	(2,742)
Total liabilities assumed	(16,858)	(11,588)
Net assets acquired	$102,709	$57,955

The final purchase price allocation related to Texel reflects post-closing adjustments pursuant to the terms of the Texel Stock Purchase Agreement. The final purchase price allocation related to Gutsche reflects post-closing adjustments pursuant to the terms of the Gutsche Share Purchase Agreement.

The following table reflects the actual operating results of the Company for the quarter and nine months ended September 30, 2017 and the unaudited pro forma operating results of the Company for the quarter and nine months ended September 30, 2016, which give effect to the acquisitions of Texel and Gutsche as if they had occurred on January 1, 2015. The pro forma information includes the historical financial results of the Company and the acquired businesses. The pro forma results are not necessarily indicative of the operating results that would have occurred had the acquisitions been effective January 1, 2015, nor are they

intended to be indicative of results that may occur in the future. The pro forma information does not include the effects of any synergies related to the acquisitions.

	Quarter Ended September 30,		Nine Months Ended September 30,	
	(Actual)	(Unaudited Pro Forma)	(Actual)	(Unaudited Pro Forma)
In thousands	2017	2016	2017	2016
Net sales	$180,041	169,126	$520,407	$499,875
Net income	$10,675	14,206	$35,469	$37,532
Earnings per share:				
Basic	$0.63	$ 0.84	$2.08	$2.23
Diluted	$0.62	$ 0.83	$2.05	$2.20

Included in earnings during the quarter ended September 30, 2017 was $1.0 million of amortization expense and $0.1 million of fair value step-up adjustments to inventory related to Texel and Gutsche.

Pro forma earnings during the quarter ended September 30, 2016 were adjusted to exclude non-recurring items such as fair value step-up adjustments to inventory of $1.6 million and acquisition related expenses of $0.8 million. Pro forma earnings during the quarter ended September 30, 2016 were adjusted to include $0.8 million of additional amortization expense of the acquired intangible assets recognized at fair value in purchase accounting and additional depreciation expense of $0.2 million resulting from increased basis of property, plant and equipment.

Included in earnings during the nine months ended September 30, 2017 was $3.0 million of amortization expense, $1.1 million of fair value step-up adjustments to inventory and acquisition related expenses of $0.1 million related to Texel and Gutsche.

Pro forma earnings during the nine months ended September 30, 2016 were adjusted to exclude non-recurring items such as acquisition related expenses of $3.2 million and fair value step-up adjustments to inventory of $1.6 million. Pro forma earnings during the nine months ended September 30, 2016 were adjusted to include $3.1 million of additional amortization expense of the acquired intangible assets recognized at fair value in purchase accounting, additional depreciation expense of $1.1 million resulting from increased basis of property, plant and equipment, as well as $0.5 million of interest expense associated with borrowings under the Company's Amended Credit Facility. Customer freight billings of $0.9 million were reclassed from costs of sales to net sales for the nine months ended September 30, 2016.

3. Inventories

Inventories as of September 30, 2017 and December 31, 2016 were as follows:

In thousands	September 30, 2017	December 31, 2016
Raw materials	$ 32,194	$ 24,518
Work in process	26,191	17,161
Finished goods	23,984	25,360
	82,369	67,039
Less: Progress billings	(1,684)	(893)
Total inventories	$ 80,685	$ 66,146

Included in work in process is gross tooling inventory of $17.0 million and $10.3 million at September 30, 2017 and December 31, 2016, respectively. Tooling inventory, net of progress billings, was $15.4 million and $9.4 million at September 30, 2017 and December 31, 2016, respectively.

4. Goodwill and Other Intangible Assets

Goodwill:

The Company tests its goodwill for impairment annually in the fourth quarter, and whenever events or changes in circumstances indicate that the carrying value may exceed its fair value.

The changes in the carrying amount of goodwill by segment as of and for the quarter ended September 30, 2017 were as follows:

In thousands	December 31, 2016	Currency translation adjustments	Additions	September 30, 2017
Performance Materials	$ 12,777	$ 462	$ —	$ 13,239
Technical Nonwovens	50,829	4,386	323	55,538
Total goodwill	$ 63,606	$ 4,848	$ 323	$ 68,777

Goodwill Associated with Acquisitions and Divestitures

The goodwill addition of $0.3 million within the Technical Nonwovens segment is the result of the final post-closing adjustments related to the acquisition of Gutsche on December 31, 2016.

Other Intangible Assets:

The table below presents the gross carrying amount and, as applicable, the accumulated amortization of the Company's acquired intangible assets other than goodwill included in "Other intangible assets, net" in the Condensed Consolidated Balance Sheets as of September 30, 2017 and December 31, 2016:

	September 30, 2017		December 31, 2016	
In thousands	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Amortized intangible assets				
Customer Relationships	$39,383	$ (3,689)	$36,131	$ (1,284)
Patents	4,443	(3,738)	4,028	(3,300)
Technology	2,500	(602)	2,500	(477)
Trade Names	4,275	(1,199)	3,912	(394)
License Agreements	632	(632)	583	(583)
Other	577	(412)	536	(205)
Total amortized intangible assets	$51,810	$ (10,272)	$47,690	$ (6,243)

5. Long-term Debt and Financing Arrangements

On July 7, 2016, the Company amended its $100 million senior secured revolving credit facility ("Amended Credit Facility") which increased the available borrowing from $100 million to $175 million, added a fourth lender and extended the maturity date to July 7, 2021. The Amended Credit Facility is secured by substantially all of the assets of the Company. Under the terms of the Amended Credit Facility, the lenders are providing a $175 million revolving credit facility to the Company, under which the lenders may make revolving loans and issue letters of credit to or for the benefit of the Company and its subsidiaries. The Company may request the Amended Credit Facility be increased by an aggregate amount not to exceed $50 million through an accordion feature, subject to specified conditions set forth in the Amended Credit Facility.

The Amended Credit Facility contains a number of affirmative and negative covenants, including financial and operational covenants. The Company is required to meet a minimum interest coverage ratio. The interest coverage ratio requires that, at the end of each fiscal quarter, the ratio of consolidated EBIT to Consolidated Interest Charges, both as defined in the Amended Credit Facility, may not be less than 2.0 to 1.0 for the immediately preceding 12

month period. In addition, the Company must maintain a Consolidated Leverage Ratio, as defined in the Amended Credit Facility, as of the end of each fiscal quarter of no greater than 3.0 to 1.0. The Company must also meet minimum consolidated EBITDA as of the end of each fiscal quarter for the preceding 12 month period of $30 million. The Company was in compliance with all covenants at September 30, 2017 and December 31, 2016.

Interest is charged on borrowings at the Company's option of either: (i) Base Rate plus the Applicable Rate, or (ii) the Eurodollar Rate plus the Applicable Rate. The Base Rate is a fluctuating rate equal to the highest of (a) the federal funds rate plus 0.50%, (b) the prime rate as set by Bank of America, and (c) the Eurocurrency Rate plus 1.00%. The Eurocurrency Rate means (i) if denominated in LIBOR quoted currency, a fluctuating LIBOR per annum rate equal to the London Interbank Offered Rate; (ii) if denominated in Canadian Dollars, the rate per annum equal to the Canadian Dealer Offered Rate; or (iii) the rate per annum as designated with respect to such alternative currency at the time such alternative currency is approved by the Lenders. The Applicable Rate is

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determined based on the Company's Consolidated Leverage Ratio (as defined in the Amended Credit Agreement). The Applicable Rate added to the Base Rate Committed Loans ranges from 15 basis points to 100 basis points, and the Applicable Rate added to Eurocurrency Rate Committed Loans and Letters of Credit ranges from 75 basis points to 175 basis points. The Company pays a quarterly fee ranging from 17.5 basis points to 30 basis points on the unused portion of the $175 million available under the Amended Credit Facility.

In April 2017, the Company entered into a three-year interest rate swap agreement transacted with a bank which converts the interest on the first notional $60.0 million of the Company's one-month LIBOR-based borrowings under its Amended Credit Facility from a variable rate, plus the borrowing spread, to a fixed rate of 1.58% plus the borrowing spread. The notional amount reduces quarterly by $5.0 million through March 31, 2020. The Company is accounting for the interest rate swap agreement as a cash flow hedge. Effectiveness of this derivative agreement is assessed quarterly by ensuring that the critical terms of the swap continue to match the critical terms of the hedged debt.

At September 30, 2017, the Company had borrowing availability of $78.4 million under the Amended Credit Facility, net of $92.6 million of borrowings outstanding and standby letters of credit outstanding of $4.0 million.

In addition to the amounts outstanding under the Amended Credit Facility, the Company has various acquired foreign credit facilities totaling approximately $11.6 million. At September 30, 2017, the Company's foreign subsidiaries had $0.1 million in borrowings outstanding as well as $3.0 million in standby letters of credit outstanding.

Total outstanding debt consists of:

In thousands	Effective Rate	Maturity	September 30, 2017	December 31, 2016
Revolver Loan, due July 7, 2021	2.24 %	2021	$ 92,600	$ 126,600
Other Foreign Bank Borrowings	0.80% - 3.40%	2017 - 2024	—	1,430
Capital Leases	1.65% - 2.09%	2019 - 2020	650	745
			93,250	128,775
Less portion due within one year			(257)	(634)
Total long-term debt			$ 92,993	$ 128,141

The carrying value of the Company's $175 million Amended Credit Facility approximates fair value given the variable rate nature of the debt. The fair values of the Company's long-term debt are determined using discounted cash flows based upon the Company's estimated current interest cost for similar type borrowings or current market value, which falls under Level 2 of the fair value hierarchy. The carrying values of the long-term debt approximate fair market value.

The weighted average interest rate on long-term debt was 2.1% for the nine months ended September 30, 2017 and 1.4% for the year ended December 31, 2016.

6. Derivatives

The Company selectively uses financial instruments to manage market risk associated with exposure to fluctuations in interest rates. These financial exposures are monitored and managed by the Company as an integral part of its risk management program. The Company's interest rate exposure is most sensitive to fluctuations in interest rates in the United States and Europe, which impact interest paid on its debt. The Company has debt with variable rates of interest based generally on LIBOR. From time to time, the Company may enter into interest rate swap agreements to manage

interest rate risk. These instruments are designated as cash flow hedges and are recorded at fair value using Level 2 observable market inputs.

Derivative instruments are recognized as either assets or liabilities on the balance sheet in either current or non-current other assets or other accrued liabilities or other long-term liabilities depending upon maturity and commitment. For derivative instruments that are designated and qualify as a cash flow hedge, the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified into earnings in the same period or periods in which the hedge transaction affects earnings. Any ineffective portion, or amounts related to contracts that are not designated as hedges, are recorded directly to earnings. The Company's policy for classifying cash flows from derivatives is to report the cash flows consistent with the underlying hedged item. The Company does not use derivatives for speculative or trading purposes or to manage commodity exposures.

In April 2017, the Company entered into a three-year interest rate swap agreement transacted with a bank which converts the interest on the first notional $60.0 million of the Company's one-month LIBOR-based borrowings under its Amended Credit

Facility from a variable rate, plus the borrowing spread, to a fixed rate of 1.58% plus the borrowing spread. The notional amount reduces quarterly by $5.0 million through March 31, 2020. The interest rate swap agreement was accounted for as cash flow hedge. Effectiveness of this derivative agreement is assessed quarterly by ensuring that the critical terms of the swap continue to match the critical terms of the hedged debt.

The following table sets forth the fair value amounts of derivative instruments held by the Company:

In thousands	September 30, 2017		December 31, 2016	
	Asset Derivatives	Liability Derivatives	Asset Derivatives	Liability Derivatives
Derivatives designated as hedging instruments:				
Interest rate contract	$ —	$ (11)	$ —	$ —
Total derivatives	$ —	$ (11)	$ —	$ —

The following table sets forth the income (loss), recorded in accumulated other comprehensive income (loss), net of tax, for the quarters and nine months ended September 30, 2017 and 2016 for derivatives held by the Company and designated as hedging instruments:

	Quarter Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Cash flow hedges:				
Interest rate contract	$ 37	$ —	$ (7)	$ —
	$ 37	—	$ (7)	$ —

7. Equity Compensation Plans

As of September 30, 2017, the Company’s equity compensation plans consisted of the 2003 Stock Incentive Compensation Plan (the “2003 Plan”) and the 2012 Stock Incentive Plan (the “2012 Plan” and together with the 2003 Plan, the “Plans”) under which incentive and non-qualified stock options and time and performance based restricted shares have been granted to employees and directors from authorized but unissued shares of common stock or treasury shares. The 2003 Plan is not active, but continues to govern all outstanding awards granted under the plan until the awards themselves are exercised or terminate in accordance with their terms. The 2012 Plan, approved by shareholders on April 27, 2012, authorizes 1.75 million shares of common stock for awards. The 2012 Plan also authorizes an additional 1.2 million shares of common stock to the extent awards granted under prior stock plans that were outstanding as of April 27, 2012 are forfeited. The 2012 Plan provides for the following types of awards: options, restricted stock, restricted stock units and other stock-based awards.

The Company accounts for the expense of all share-based compensation by measuring the awards at fair value on the date of grant. The Company recognizes expense on a straight-line basis over the vesting period of the entire award. Options issued by the Company under its stock option plans have a term of ten years and generally vest ratably over a period of three to four years. Time-based restricted stock grants are expensed over the vesting period of the award, which is typically two to four years. The number of performance based restricted shares that vest or forfeit depend upon achievement of certain targets during the performance period. Prior to January 1, 2016, stock compensation expense included estimated effects of forfeitures. Upon adoption of ASU 2016-09, Improvements to Employee Share-Based Payment Accounting, in the first quarter of 2016, an accounting policy election was made to account for forfeitures as they occur. Compensation expense for performance based awards is recorded based upon the service period and management’s assessment of the probability of achieving the performance goals and will be adjusted based upon actual achievement.

The Company incurred equity compensation expense of $1.0 million for each of the quarters ended September 30, 2017 and September 30, 2016, and $3.2 million and $3.1 million for the nine months ended September 30, 2017 and September 30, 2016, respectively, for the Plans, including restricted stock awards. No equity compensation costs were capitalized as part of inventory.

Stock Options

The following table is a summary of outstanding and exercisable options as of September 30, 2017:

In thousands except per share amounts and years	Shares	Weighted-Average Exercise Price	Aggregate Intrinsic Value
Outstanding at September 30, 2017	393	$ 26.51	$ 12,350
Exercisable at September 30, 2017	214	$ 16.51	$ 8,700
Unvested at September 30, 2017	179	$ 38.41	$ 3,650

There were no stock options granted and 6,170 stock options exercised during the quarter ended September 30, 2017 and no stock options granted and 34,634 stock options exercised during the nine months ended September 30, 2017. The amount of cash received from the exercise of stock options was $0.1 million during the quarter ended September 30, 2017 and $0.4 million during the nine months ended September 30, 2017. The intrinsic value of stock options exercised was $0.2 million with a tax benefit of $0.1 million during the quarter ended September 30, 2017 and the intrinsic value of stock options exercised was $1.4 million with a tax benefit of $0.4 million during the nine months ended September 30, 2017.

There were no stock options granted and 18,863 stock options exercised during the quarter ended September 30, 2016 and 18,300 stock options granted and 46,502 stock options exercised during the nine months ended September 30, 2016. The amount of cash received from the exercise of stock options was $0.2 million during the quarter ended September 30, 2016 and $0.6 million during the nine months ended September 30, 2016. The intrinsic value of stock options exercised was $0.7 million with a tax benefit of $0.2 million during the quarter ended September 30, 2016 and the intrinsic value of stock options exercised was $1.3 million with a tax benefit of $0.3 million during the nine months ended September 30, 2016.

At September 30, 2017, the total unrecognized compensation cost related to non-vested stock option awards was approximately $1.8 million, with a weighted average expected amortization period of 2.6 years.

Restricted Stock

Restricted stock includes both performance-based and time-based awards. There were no time-based restricted stock shares granted during the quarter and nine month period ended September 30, 2017. There were no performance-based restricted shares granted during the quarter ended September 30, 2017 and 18,100 performance-based restricted shares granted for the nine months ended September 30, 2017. There were no performance-based restricted shares that vested during the quarter ended September 30, 2017 and 108,600 performance-based restricted shares that vested during the nine months ended September 30, 2017 in accordance with plan provisions. There were 6,000 time-based restricted shares that vested during the quarter ended September 30, 2017 and 15,288 time-based restricted shares that vested during the nine months ended September 30, 2017.

There were 8,570 time-based restricted shares granted during the quarter ended September 30, 2016 and 16,500 time-based restricted shares granted during the nine months ended June 30, 2016. There were no performance-based restricted shares granted during the quarter ended September 30, 2016 and 7,380 performance-based shares granted in the nine months ended September 30, 2016, which have a 2018 earnings per share target. There were no performance-based restricted shares that vested during the quarter ended September 30, 2016 and there were 65,087 performance-based restricted shares that vested during the nine months ended September 30, 2016 in accordance with Plan provisions. There were 6,000 time-based restricted shares that vested during the quarter ended September 30, 2016 and there were 14,129 time-based restricted shares that vested during the nine months ended September 30,

2016.

At September 30, 2017, there were 187,620 unvested restricted stock awards with total unrecognized compensation cost related to these awards of $3.7 million with a weighted average expected amortization period of 1.8 years. Compensation expense for performance based awards is recorded based on the service period and management’s assessment of the probability of achieving the performance goals.

8. Stock Repurchases

During the nine months ended September 30, 2017, the Company purchased 44,352 shares of common stock valued at $2.6 million, through withholding, pursuant to provisions in agreements with recipients of restricted stock granted under the Company’s equity compensation plans, in which the Company withholds that number of shares having fair value equal to each recipient’s minimum tax withholding due.

9. Restructuring

In April 2017, the Company commenced a restructuring plan in the Technical Nonwovens segment which will include plant consolidations and transfer of equipment to other facilities within the segment's Europe and China operations. The consolidation of certain plants, which is expected to conclude in the second quarter of 2019, is expected to reduce operating costs, increase efficiency and enhance the Company’s flexibility by better aligning its manufacturing footprint with the segment's customer base. Accordingly, the Company expects to record pre-tax expenses of approximately $5.0 million, in connection with this restructuring plan, of which approximately $4.8 million is expected to result in cash expenditures over the period of consolidation. The Company also expects to incur cash expenditures of approximately $3.5 million for capital expenditures associated with this plan.

During the quarter ended September 30, 2017, the Company recorded pre-tax restructuring expenses of $0.2 million as part of this restructuring plan in cost of sales for the quarter. During the nine months ended September 30, 2017, the Company recorded pre-tax restructuring expenses of $0.4 million as part of this restructuring plan. Restructuring expenses of $0.2 million were recorded in both cost of sales and selling, product development and administrative expenses for the nine months ended September 30, 2017. The Company expects to record approximately $0.7 million of restructuring expenses in the fourth quarter of 2017.

Actual pre-tax expenses incurred and total estimated pre-tax expenses for the restructuring program by type are as follows:

In thousands	Severance and Related Expenses	Contract Termination Expenses	Facility Exit, Move and Set-up Expenses	Total
Expense incurred during quarter ended:				
June 30, 2017	$ 74	$ 185	$ 34	$293
September 30, 2017	87	(49)	116	154
Total pre-tax expense incurred	$ 161	$ 136	$ 150	$447
Estimated remaining expense at September 30, 2017	1,000	150	3,400	4,550
Total estimated pre-tax expense	$ 1,161	$ 286	$ 3,550	$4,997

There were cash outflows of $0.1 million for the restructuring program for the quarter and nine months ended September 30, 2017.

Accrued restructuring costs were as follows at September 30, 2017:

In thousands	Total
Balance as of March 31, 2017	$—
Pre-tax restructuring expenses	293
Cash paid	—
Balance as of June 30, 2017	$293
Pre-tax restructuring expenses	71
Cash paid	(54)
Balance as of September 30, 2017	$310

10. Employer Sponsored Benefit Plans

As of September 30, 2017, the Company maintains a defined benefit pension plan that covers certain domestic Lydall employees (“domestic pension plan”) that is closed to new employees and benefits are no longer accruing. The domestic

pension plan is noncontributory and benefits are based on either years of service or eligible compensation paid while a participant is in the plan. The Company's funding policy is to fund not less than the ERISA minimum funding standard and not more than the maximum amount that can be deducted for federal income tax purposes.

Contributions of $1.2 million and $3.6 million were made during the quarter and nine months ended September 30, 2017, respectively. The Company does not expect to make any further contributions in the fourth quarter of 2017. Contributions of $3.6 million were made during the quarter and nine months ended September 30, 2016.

The following is a summary of the components of net periodic benefit cost, which is recorded primarily within selling, product development and administrative expenses, for the domestic pension plan for the quarters and nine months ended September 30, 2017 and 2016:

	Quarter Ended September 30,		Nine Months Ended September 30,	
In thousands	2017	2016	2017	2016
Components of net periodic benefit cost				
Interest cost	$514	$535	$1,543	$1,605
Expected return on assets	(594)	(605)	(1,782)	(1,815)
Amortization of actuarial loss	273	233	819	700
Net periodic benefit cost	$193	$163	$580	$490

11. Income Taxes

The Company’s effective tax rate was 24.2% and 29.7% for the quarters ended September 30, 2017 and 2016, and 24.0% and 31.5% for the nine months ended September 30, 2017 and 2016, respectively. The difference in the Company’s effective tax rate for the quarter ended September 30, 2017 compared to the quarter ended September 30, 2016 was primarily related to a net tax benefit of $1.4 million from the completion of a tax audit in the third quarter of 2017, partially offset by $0.4 million of tax expense related to a repatriation of foreign cash back into the United States. The difference in the Company's effective tax rate for the nine months ended September 30, 2017 compared to the nine months ended September 30, 2016 was primarily related to tax benefits from stock compensation of $1.7 million for the nine months ended September 30, 2017 compared to $0.4 million for the nine months ended September 30, 2016, the net tax benefit of $1.4 million in the third quarter of 2017 related to the completion of a tax audit and a more favorable mix of income in lower taxed jurisdictions during the nine months ended September 30, 2017.
The Company and its subsidiaries file a consolidated federal income tax return, as well as returns required by various state and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities, including such major jurisdictions as the United States, France, Germany, China, the United Kingdom, the Netherlands and Canada. With few exceptions, the Company is no longer subject to U.S. federal examinations for years before 2015, state and local examinations for years before 2012, and non-U.S. income tax examinations for years before 2003.
The Company’s effective tax rates in future periods could be affected by earnings being higher or lower in countries where tax rates differ from the United States federal tax rate, the relative impact of permanent tax adjustments on higher or lower earnings from domestic operations, changes in net deferred tax asset valuation allowances, stock vesting, the completion of acquisitions or divestitures, changes in tax rates or tax laws and the completion of tax projects and audits.

12. Earnings Per Share

For the quarters and nine months ended September 30, 2017 and 2016, basic earnings per share were computed by dividing net income by the weighted average number of shares of common stock outstanding during the period. Unexercised stock options and unvested restricted shares are excluded from this calculation but are included in the diluted earnings per share calculation using the treasury stock method as long as their effect is not antidilutive.

The following table provides a reconciliation of weighted-average shares used to determine basic and diluted earnings per share:

	Quarter Ended	Nine Months Ended

In thousands	September 30, 2017	2016	September 30, 2017	2016
Basic average common shares outstanding	17,055	16,888	17,028	16,859
Effect of dilutive options and restricted stock awards	212	250	242	225
Diluted average common shares outstanding	17,267	17,138	17,270	17,084

For each of the quarters ended September 30, 2017 and 2016, stock options for 38,280 shares and 91,900 shares of Common Stock were not considered in computing diluted earnings per common share because they were antidilutive.

For the nine months ended September 30, 2017 and 2016, stock options for 38,280 shares and 96,455 shares of common stock, respectively, were not considered in computing diluted earnings per share because they were antidilutive.

13. Segment Information

As of September 30, 2017, the Company's reportable segments are Performance Materials, Technical Nonwovens, Thermal/Acoustical Metals, and Thermal/Acoustical Fibers.

On December 31, 2016, the Company completed an acquisition of the nonwoven needle punch materials businesses, which include MGF Gutsche & Co GmbH KG, FRG and Gutsche Environmental Technology (Yixing) Co. Ltd., China, operating under Gutsche ("Gutsche"), a German based corporation. The Gutsche operations manufacture nonwoven needle punch materials and predominantly serve the industrial filtration and high performance nonwoven markets. The acquired businesses are included in the Company's Technical Nonwovens reporting segment.

On July 7, 2016, the Company completed an acquisition of the nonwoven and coating materials businesses primarily operating under the Texel brand ("Texel") from ADS, Inc. ("ADS"), a Canadian based corporation. The Texel operations manufacture nonwoven needle punch materials and predominantly serve the geosynthetic, liquid filtration, and other industrial markets. The acquired businesses are included in the Company's Technical Nonwovens reporting segment.

During the third quarter of 2017, the Company announced its plan to combine the Thermal/Acoustical Metals and Thermal/Acoustical Fibers operating segments into a single operating segment named Thermal Acoustical Solutions. Combining these automotive segments into one segment is expected to allow the Company to better serve its customers, leverage operating disciplines and drive efficiencies across the global automotive operations. Through the balance of the year these two segments will continue to operate independently as the Company defines the future global structure and strategies of the combined businesses and expects to commence the reporting of the two businesses as a single consolidated operating segment effective January 1, 2018.

Performance Materials Segment

The Performance Materials segment includes filtration media solutions primarily for air, fluid power, and industrial applications ("Filtration"), thermal insulation solutions for building products, appliances, and energy and industrial markets ("Thermal Insulation") and air and liquid life science applications ("Life Sciences Filtration"). Filtration products include LydAir® MG (Micro-Glass) Air Filtration Media, LydAir® MB (Melt Blown) Air Filtration Media, LydAir® SC (Synthetic Composite) Air Filtration Media, and Arioso™ Membrane Composite Media. These products constitute the critical media component of clean-air systems for applications in clean-space, commercial, industrial and residential HVAC, power generation, and industrial processes. Lydall has leveraged its extensive technical expertise and applications knowledge into a suite of media products covering the vast liquid filtration landscape across the engine and industrial fields. The LyPore® Liquid Filtration Media series address a variety of application needs in fluid power including hydraulic filters, air-water and air-oil coalescing, industrial fluid processes and diesel fuel filtration.

Thermal Insulation products are high performance nonwoven veils, papers, mats and specialty composites for the building products, appliance, and energy and industrial markets. The Manniglas® Thermal Insulation brand is diverse in its product application ranging from high temperature seals and gaskets in ovens and ranges to specialty veils for HVAC and cavity wall insulation. The appLY® Mat Needled Glass Mats have been developed to expand Lydall's high temperature technology portfolio for broad application into the appliance market and supplements the Lytherm® Insulation Media product brand, traditionally utilized in the industrial market for kilns and furnaces used in metal processing. Lydall's Cryotherm® Super-Insulating Media, CRS-Wrap® Super-Insulating Media and Cryo-Lite™ Cryogenic Insulation products are industry standards for state-of-the-art cryogenic insulation designs used by manufacturers of cryogenic equipment for liquid gas storage, piping, and transportation.

Life Sciences is comprised of products which have been designed to meet the stringent requirements of critical applications including biopharmaceutical pre-filtration and clarification, lateral flow diagnostic and analytical testing, respiratory protection, potable water filtration and high purity process filtration such as that found in food and beverage and medical applications. Lydall also offers ultra-high molecular weight polyethylene membranes under the Solupor® trade name. These specialty microporous membranes are utilized in various markets and applications including air and liquid filtration and transdermal drug delivery. Solupor® membranes incorporate a unique combination of high mechanical strength, chemical inertness, gamma stability and very high porosity making them ideal for many applications.

Technical Nonwovens Segment

The Technical Nonwovens segment primarily produces needle punch nonwoven solutions for myriad industries and applications. Products are manufactured and sold globally under the leading brands of Lydall Industrial Filtration, Southern Felt, Gutsche, and Texel. Industrial Filtration products include nonwoven rolled-good felt media and filter bags used primarily in industrial air and liquid filtration applications. Nonwoven filter media is the most effective solution to satisfy increasing emission control regulations in a wide range of industries, including power, cement, steel, asphalt, incineration, mining, food, and pharmaceutical. Advanced Materials products include nonwoven rolled-good media used in commercial applications and predominantly serves the

geosynthetics, automotive, industrial,medical, and safety apparel markets. Automotive media is provided to Tier I/II suppliers and as well as the Company's Thermal/Acoustical Fibers segment.

Technical Nonwovens segment products include air and liquid filtration media sold under the brand names Fiberlox® high performance filtration felts, Checkstatic™ conductive filtration felts, Microfelt® high efficiency filtration felts, Pleatlox® pleatable filtration felts, Ultratech™ PTFE filtration felts, Powertech® and Powerlox® power generation filtration felts, Microcap® high efficiency liquid filtration felts, Duotech membrane composite filtration felts, along with our porotex® family of high temperature filtration felts including microvel® and optivel® products. Technical Nonwovens Advanced Materials products are sold under the brand names Thermofit® thermo-formable products, Ecoduo® recycled content materials, Duotex® floor protection products, and Versaflex® composite molding materials. Technical Nonwovens also offers extensive finishing and coating capabilities which provide custom engineered properties tailored to meet the most demanding applications. The business leverages a wide range of fiber types and extensive technical capabilities to provide products that meet our customers' needs across a variety of applications providing both high performance and durability.

Thermal/Acoustical Metals Segment

The Thermal/Acoustical Metals segment offers a full range of innovative engineered products tailored for the transportation sector to thermally shield sensitive components from high heat, improve exhaust gas treatment and lower harmful emissions as well as assist in the reduction of powertrain and road noise. Lydall products are found in the underbody (tunnel, fuel tank, rear muffler, spare tire) and underhood (outer dash, powertrain, catalytic converter, turbo charger, manifolds) of cars, trucks, SUVs, heavy duty trucks and recreational vehicles.

Thermal/Acoustical Metals segment products are formed on production lines capable of efficiently combining multiple layers of metal and thermal - acoustical insulation media to provide an engineered thermal and acoustical shielding solution for an array of application areas in the global automotive and truck markets. The flux® product family in Thermal/Acoustical Metals includes several patented or IP-rich products that address applications which include: Direct Exhaust Mount heat shields, which are assembled to high temperature components like catalytic converters, turbochargers or exhaust manifolds using aluminized and stainless steel and high performance and high temperature heat insulating materials; Powertrain heat shields that absorb noise at the source and do not contribute to the engine's noise budget; and durable, thermally robust solutions for temperature sensitive plastic components such as fuel tanks that are in proximity to high temperature heat sources.

Thermal/Acoustical Fibers Segment

The Thermal/Acoustical Fibers segment offers innovative engineered products to assist primarily in noise vibration and harshness (NVH) abatement within the transportation sector. Lydall products are found in the interior (dash insulators, cabin flooring), underbody (wheel well, aerodynamic belly pan, fuel tank, exhaust) and under hood (engine compartment) of cars, trucks, SUVs, heavy duty trucks and recreational vehicles.

Thermal/Acoustical Fibers segment products offer thermal and acoustical insulating solutions comprised of organic and inorganic fiber composites for the automotive and truck markets primarily in North America. Lydall's dBCore® is a lightweight acoustical composite that emphasizes absorption principles over heavy-mass type systems. Lydall's dBLyte® is a high-performance acoustical barrier with sound absorption and blocking properties and can be used throughout a vehicle's interior to minimize intrusive noise from an engine compartment and road. Lydall's ZeroClearance® is an innovative thermal solution that utilizes an adhesive backing for attachment and is used to protect vehicle components from excessive heat. Lydall's specially engineered products provide a solution that provides weight reduction, superior noise suppression, and increased durability over conventional designs.

Thermal/Acoustical Metals segment and Thermal/Acoustical Fibers segment operating results include allocations of certain costs shared between the segments.

The tables below present net sales and operating income by segment for the quarters and nine months ended September 30, 2017 and 2016, and also a reconciliation of total segment net sales and operating income to total consolidated net sales and operating income.

Consolidated net sales by segment:

	Quarter Ended September 30,		Nine Months Ended September 30,	
In thousands	2017	2016	2017	2016
Performance Materials Segment:				
Filtration	$19,946	$18,045	$58,047	$53,861
Thermal Insulation	7,283	7,081	22,116	20,570
Life Sciences Filtration	2,318	3,705	7,436	10,749
Performance Materials Segment net sales	29,547	28,831	87,599	85,180
Technical Nonwovens Segment (1):				
Industrial Filtration	38,346	25,414	108,884	67,805
Advanced Materials (2)	34,960	26,870	90,438	43,526
Technical Nonwovens net sales	73,306	52,284	199,322	111,331
Thermal/Acoustical Metals Segment:				
Metal parts	41,522	39,807	124,043	117,578
Tooling	8,297	4,830	13,441	14,301
Thermal/Acoustical Metals Segment net sales	49,819	44,637	137,484	131,879
Thermal/Acoustical Fibers Segment:				
Fiber parts	34,739	35,073	116,430	107,629
Tooling	884	1,356	4,064	4,829
Thermal/Acoustical Fibers Segment net sales	35,623	36,429	120,494	112,458
Eliminations and Other (2)	(8,254)	(6,456)	(24,492)	(18,188)
Consolidated Net Sales	$180,041	$155,725	$520,407	$422,660

Operating income by segment:

	Quarter Ended September 30,		Nine Months Ended September 30,	
In thousands	2017	2016	2017	2016
Performance Materials	$3,063	$3,283	$8,516	$10,102
Technical Nonwovens (1)	8,589	5,662	19,792	12,807
Thermal/Acoustical Metals	1,836	5,451	7,453	13,090
Thermal/Acoustical Fibers	8,716	10,026	33,162	30,980
Corporate Office Expenses	(7,043)	(6,125)	(18,963)	(19,481)
Consolidated Operating Income	$15,161	$18,297	$49,960	$47,498

(1) The Technical Nonwovens segment reports results of Texel and Gutsche for the period following the dates of acquisition of July 7, 2016 and December 31, 2016, respectively.

(2) Included in the Technical Nonwovens segment and Eliminations and Other is $6.5 million and $4.5 million in intercompany sales to the T/A Fibers segment for the quarters ended September 30, 2017 and 2016, respectively, and $19.5 million and $13.6 million for the nine months ended September 30, 2017 and 2016, respectively.

14. Commitments and Contingencies

The Company is subject to legal proceedings, claims, investigations and inquiries that arise in the ordinary course of business such as, but not limited to, actions with respect to commercial, intellectual property, employment, personal injury, and environmental matters. The Company believes that it has meritorious defenses against the claims currently asserted against it and intends to defend them vigorously. While the outcome of litigation is inherently uncertain and the Company cannot be sure that it will prevail in any of the cases, subject to the matter referenced below, the Company is not aware of any matters pending that are expected to have a material adverse effect on the Company's business, financial position, results of operations or cash flows.

Lydall Gerhardi GmbH Co. & KG (“Lydall Gerhardi”), an indirect wholly-owned subsidiary of the Company and part of Lydall’s Thermal/Acoustical Metals reporting segment, has cooperated with the German Federal Cartel Office, Bundeskartellamt (“German Cartel Office”) since May 2014 in connection with an investigation related to violations of German anti-trust laws by and among certain European automotive heat shield manufacturers, including Lydall Gerhardi.

In December 2016, Lydall Gerhardi agreed in principle with the German Cartel Office to pay a settlement amount of €3.3 million. The Company recorded the expense of €3.3 million (approximately $3.5 million U.S. Dollars) in December 2016. In July 2017, Lydall Gerhardi entered into a formal settlement agreement with the German Cartel Office, and remitted payment in full in August 2017 of €3.3 million (approximately $3.9 million U.S. Dollars), definitively concluding this matter.

Environmental Remediation

The Company has elected to remediate environmental contamination discovered prior to the closing of the Texel acquisition at a certain property in the province of Quebec, Canada (“the Property”) that was acquired by Lydall. The Company records accruals for environmental costs when such losses are probable and reasonably estimable. In 2016, the Company, through the engagement of a third-party environmental service firm, determined the final scope and timing of the remediation project and estimated the cost of the remediation project to range between $0.9 million and $1.5 million. Based upon this range of estimated remediation costs, the Company recorded an environmental liability of $0.9 million within other long-term liabilities on the Company's balance sheet at December 31, 2016. In July, 2017, the third-party environmental service firm completed its initial investigatory work and, based on information provided from the results of such work, the Company increased its environmental liability by $0.6 million at June 30, 2017. During the nine months ended September 30, 2017, the environmental liability was reduced by $0.2 million, reflecting payments made to vendors, resulting in a balance of $1.3 million at September 30, 2017. The remaining balance for the environmental liability of $1.3 million (which remains fully offset as described below) is included within other long-term liabilities on the Company's balance sheet at September 30, 2017.

Pursuant to the Share Purchase Agreement, ADS has agreed to indemnify the Company from all costs and liabilities associated with the contamination and remediation work, including the costs of preparation and approval of the remediation plan and other reports in relation therewith. This indemnity was secured by an environmental escrow account, which was established in the amount of $3.0 million Canadian Dollars (approximately $2.4 million U.S. Dollars as of September 30, 2017). Should the costs and liabilities exceed the environmental escrow amount, the Company also has access to the general indemnity escrow account, which was originally established in the amount of $14.0 million Canadian Dollars (approximately $11.2 million U.S. Dollars as of September 30, 2017), and based on the Share Purchase Agreement was reduced to approximately $7.0 million Canadian Dollars (approximately $5.6 million U.S. Dollars as of September 30, 2017). Based on the foregoing, an indemnification asset of $0.9 million was also recorded in other assets at December 31, 2016 as the Company believed, and still believes collection from ADS is probable. This indemnification asset was increased by $0.6 million to reflect the most current estimate of $1.5 million at June 30, 2017. The indemnification asset was decreased by $0.2 million reflecting indemnification from ADS for payments made by the Company to its vendors during the nine months ended September 30, 2017. The resulting indemnification asset balance is $1.3 million at September 30, 2017. The accrual for remediation costs will be adjusted as further information develops, estimates change and payments to vendors are made for remediation, with an off-setting adjustment to the indemnification asset from ADS if collection is deemed probable.

In the fourth quarter of 2016, as part of a groundwater discharging permitting process, water samples collected from wells and process water basins at the Company’s Rochester New Hampshire manufacturing facility, within the Performance Materials segment, showed concentrations of Perfluorinated Compounds (“PFCs”) in excess of state

ambient groundwater quality standards.

In January 2017, the Company received a notification from the State of New Hampshire Department of Environmental Services ("NHDES") naming Lydall Performance Materials, Inc. a responsible party with respect to the discharge of regulated contaminants and, as such, is required to take action to investigate and remediate the impacts in accordance with standards established by the NHDES. The Company is conducting a site investigation, the scope of which has been reviewed by the NHDES, in order to assess the extent of potential soil and groundwater contamination and develop a remedial action. Based on input received from NHDES in March 2017 with regard to the scope of the site investigation, the Company recorded $0.2 million of expense in the first quarter of 2017 associated with the expected costs of conducting this site investigation. Based on additional information obtained through the results of its site investigation and correspondence with NHDES in September 2017, no additional expense was recorded in the third quarter of 2017. In the fourth quarter of 2017, the Company expects to submit its final site investigation report to the NHDES. The Company does not know the scope or extent of its future obligations, if any, that may arise from the NHDES review of the site investigation report and therefore is unable to estimate the cost of any required future corrective actions. During the nine months ended September 30, 2017, the environmental liability of $0.2 million has been reduced by $0.1 million reflecting payments made to vendors, resulting in a balance of $0.1 million at September 30, 2017. While the site investigation is nearly complete, the Company cannot assure that costs will not exceed the current estimates nor that any future corrective action at this location would not have a material effect on the Company's financial condition, results of operations or liquidity. Provisions for such matters are charged to expense when it is probable that a liability has been incurred and reasonable estimates of the liability

can be made. Estimates of environmental liabilities are based on a variety of matters, including, but not limited to, the stage of investigation, the stage of the remedial design, evaluation of existing remediation technologies, and presently enacted laws and regulations. In future periods, a number of factors could significantly impact any estimates of environmental remediation costs.

15. Changes in Accumulated Other Comprehensive Income (Loss)

The following table discloses the changes by classification within accumulated other comprehensive income (loss) for the periods ended September 30, 2017 and 2016:

In thousands	Foreign Currency Translation Adjustment	Defined Benefit Pension Adjustment	Gains and Losses on Cash Flow Hedges	Total Accumulated Other Comprehensive (Loss) Income
Balance at December 31, 2015	$ (16,920)	$ (17,665)	$ —	$ (34,585)
Other Comprehensive loss	(2,324)	—	—	(2,324)
Amounts reclassified from accumulated other comprehensive loss	—	427 (a)	—	427
Balance at September 30, 2016	(19,244)	(17,238)	—	(36,482)
Balance at December 31, 2016	(27,885)	(20,065)	—	(47,950)
Other Comprehensive Income/(loss)	23,951	—	(7) (b)	23,944
Amounts reclassified from accumulated other comprehensive loss	—	516 (a)	—	516
Balance at September 30, 2017	$ (3,934)	$ (19,549)	$ (7)	$ (23,490)

(a) Amount represents amortization of actuarial losses, a component of net periodic benefit cost. This amount was $0.5 million, net of $0.3 million tax benefit for the nine months ended September 30, 2017 and 2016.

(b) Amount represents unrealized losses on the fair value of hedging activities, net of taxes, for the nine months ended September 30, 2017.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

OVERVIEW AND OUTLOOK

Business

Lydall, Inc. and its subsidiaries (collectively, the "Company" or "Lydall") design and manufacture specialty engineered nonwoven filtration media, industrial thermal insulating solutions, and thermal and acoustical barriers for filtration/separation and heat abatement and sound dampening applications. Lydall principally conducts its business through four reportable segments: Performance Materials, Technical Nonwovens, Thermal/Acoustical Metals and Thermal/Acoustical Fibers, with sales globally. The Performance Materials segment includes filtration media solutions for air, fluid power, and industrial applications ("Filtration"), air and liquid life science applications ("Life Sciences Filtration"), and thermal insulation solutions for building products, appliances, and energy and industrial markets ("Thermal Insulation"). The Technical Nonwovens ("TNW") consists of Industrial Filtration products that include nonwoven rolled-goods felt media and filter bags used primarily in industrial air and liquid filtration applications as well as Advanced Materials products that include nonwoven rolled-good media that is used in other commercial applications and predominantly serves the geosynthetics, automotive, industrial and medical markets. Advanced Materials products also include automotive rolled-good material for use in the Thermal/Acoustical Fibers segment manufacturing process. Nonwoven filter media is used to satisfy increasing emission control regulations in a wide range of industries, including power, cement, steel, asphalt, incineration, food, and pharmaceutical. The Thermal/Acoustical Metals ("T/A Metals") segment and Thermal/Acoustical Fibers ("T/A Fibers") segment offer innovative engineered products to assist in noise and heat abatement within the transportation sector.

During the third quarter of 2017, the Company announced its plan to combine the Thermal/Acoustical Metals and Thermal/Acoustical Fibers operating segments into a single operating segment named Thermal Acoustical Solutions. Combining these automotive segments into one segment is expected to allow the Company to better serve its customers, leverage operating disciplines and drive efficiencies across the global automotive operations. Through the balance of the year these two segments will continue to operate independently as the Company defines the future global structure and strategies of the combined businesses and expects to commence the reporting of the two businesses as a single consolidated operating segment effective January 1, 2018.

Third Quarter 2017 Highlights

Below are financial highlights comparing Lydall's quarter ended September 30, 2017 ("Q3 2017") results to its quarter ended September 30, 2016 ("Q3 2016") results:

- Net sales were $180.0 million in Q3 2017, compared to $155.7 million in Q3 2016, an increase of $24.3 million, or 15.6%. The change in consolidated net sales is summarized in the following table:

Components	Change in Net Sales	Percent Change
Acquisitions	$13,917	8.9 %
Parts volume and pricing change	4,354	2.8 %
Change in tooling sales	3,397	2.2 %
Foreign currency translation	2,648	1.7 %
Total	$24,316	15.6 %

- The increase in net sales was primarily from the TNW segment which reported increased net sales of $21.0 million, including $13.9 million from the Gutsche acquisition that occurred on December 31, 2016. The remaining increase in TNW's net sales was from volume increases in industrial filtration and advanced materials products, including increased intercompany sales to the Thermal/Acoustical Fibers ("T/A Fibers) segment of $2.0 million. In the Thermal/Acoustical Metals ("T/A Metals") segment, sales growth was $5.2 million, or 3.3% of consolidated net sales, including increased tooling net sales of $3.3 million in advance of new platform launches. A marginal increase in Performance Materials ("PM") segment net sales was essentially offset by lower net sales from the T/A Fibers segment during the third quarter of 2017.

- Gross margin was 22.2%, compared to 24.5% in the second quarter of 2016, with the reduction principally driven by the T/A Metals segment, and to a lesser extent the T/A Fibers segment. The T/A Metals segment negatively impacted

consolidated gross margin by approximately 190 basis points, due to increased raw material commodity costs, reduced customer pricing, and unfavorable mix, and to a lesser extent, operational inefficiencies. The T/A Fibers segment negatively impacted consolidated gross margin by approximately 50 basis points primarily due to reduced customer pricing, including from part design changes, in the third quarter of 2017 compared to the third quarter of 2016.

- Operating income was $15.2 million, or 8.4%, of net sales in Q3 2017, compared to $18.3 million, or 11.7% of net sales, in Q3 2016. Operating margin declined compared to Q3 2016 due to the negative impact of lower gross margin of 230 basis points coupled with increased selling, product development and administrative expenses as a percentage of net sales of 100 basis points. The following components are included in operating income for Q3 2017 and Q3 2016 and impact the comparability of each quarter:

Components	Q3 2017	Q3 2016	Increase (Decrease)
Amortization of intangible assets	$1,129	$616	$ 513
Automotive segments consolidation expenses	1,197	—	1,197
Strategic initiatives expenses	326	537	(211)
TNW restructuring expenses	154	—	154
Inventory step-up purchase accounting adjustments	83	1,607	(1,524)

- Effective tax rate for Q3 2017 was 24.2% compared to 29.7% in Q3 2016. The effective tax rate in Q3 2017 was positively impacted by a net tax benefit of $1.4 million from the completion of an income tax audit that concluded in the third quarter of 2017.

- Net income was $10.7 million, or $0.62 per diluted share, in Q3 2017 and $12.8 million, or $0.75 per diluted share, in Q3 2016.

Liquidity

Cash flows from operations in the first nine months of 2017 were $46.2 million compared with $47.4 million in the first nine months of 2016, as improved cash from net income was offset by increases in working capital, including tooling inventory in advance of new platform launches and timing of tax payments. Cash was $64.7 million at September 30, 2017, net of $34.0 million paid down on the Company’s domestic credit facility during 2017, leaving availability of $78.4 million on the facility at September 30, 2017.

Outlook

Looking forward to the remainder of 2017, the Company expects demand to be generally stable in Lydall's markets across all segments, and expects organic growth consistent with the third quarter of 2017. From a gross margin perspective, the Company expects to be in a range consistent with the third quarter of 2017 and the final quarter of 2016. The Company remains focused on executing the Technical Nonwovens' integration plan that is expected to reduce operating costs and increase efficiency, and the Thermal Acoustical Solutions consolidation, an initiative that is expected to deliver approximately $2.0 million run-rate cost savings. Last, from a liquidity standpoint, the Company has ample capacity to support organic growth programs, fund capital investments and pursue attractive acquisitions that will drive profitable growth.

Results of Operations

All of the following tabular comparisons, unless otherwise indicated, are for the quarters ended September 30, 2017 (Q3-17) and September 30, 2016 (Q3-16) and the nine months ended September 30, 2017 (YTD-17) and September 30, 2016 (YTD-16).

Net Sales

	Quarter Ended			Nine Months Ended		
In thousands	Q3-17	Q3-16	Percent Change	YTD-17	YTD-16	Percent Change
Net sales	$180,041	$155,725	15.6 %	$520,407	$422,660	23.1 %

Net sales for the third quarter of 2017 increased by $24.3 million, or 15.6%, compared to the third quarter of 2016. This increase was primarily related to greater net sales in the Technical Nonwovens segment of $21.0 million, or 13.5% of consolidated net sales, including $13.9 million of net sales from the Gutsche acquisition, which occurred on December 31, 2016. There were no Gutsche sales included in the Technical Nonwovens segment in the third quarter of 2016. The T/A Metals segment reported sales growth of $5.2 million, or 3.3% of consolidated net sales, in the third quarter of 2017 compared to the third quarter of 2016 and the Performance Materials segment reported growth in net sales of $0.7 million, or 0.5% of consolidated net sales. The T/A Fibers segment reported a decrease in net sales of $0.8 million, or 0.5% of consolidated net sales, in the third quarter of 2017 compared to the third quarter of 2016. Foreign currency translation had a favorable impact on net sales of $2.6 million, or 1.7% of consolidated net sales, in the third quarter of 2017 compared to the third quarter of 2016.

Net sales for the nine months ended September 30, 2017 increased by $97.7 million, or 23.1%, compared to the nine months ended September 30, 2016. This increase was primarily related to greater net sales in the Technical Nonwovens segment of $88.0 million, or 20.8% of consolidated net sales, including $73.1 million from the Texel and Gutsche acquisitions, which occurred on July 7, 2016 and December 31, 2016, respectively. There were no Gutsche sales included in the Technical Nonwovens segment in the first nine months of 2016 and no Texel sales in the first six months of 2016. The T/A Fibers segment reported growth in net sales of $8.0 million, or 1.9 of consolidated net sales%, and the T/A Metals segment reported growth in net sales of $5.6 million, or 1.3% of consolidated net sales, in the first nine months of 2017 compared to the first nine months of 2016. The Performance Materials segment reported growth in net sales of $2.4 million, or 0.6% of consolidated net sales. Foreign currency translation had an unfavorable impact on net sales of $1.9 million, or 0.4% of consolidated net sales, in the first nine months of 2017 compared to the first nine months of 2016.

Cost of Sales

	Quarter Ended			Nine Months Ended		
In thousands of dollars	Q3-17	Q3-16	Percent Change	YTD-17	YTD-16	Percent Change
Cost of sales	$140,061	$117,532	19.2 %	$396,750	$316,100	25.5 %

Cost of sales for the third quarter of 2017 increased by $22.5 million, or 19.2%, compared to the third quarter of 2016. The increase was primarily due to increased sales of $21.0 million in the Technical Nonwovens segment, primarily related to the Gutsche acquisition, as well as increases in sales volumes in the T/A Metals and Performance Materials segments aggregating to $5.9 million. Also contributing to the increase in cost of sales for the third quarter of 2017 compared to the third quarter of 2016 was unfavorable mix causing increased costs in the T/A Metals, Technical Nonwovens and Performance Materials segments. The unfavorable mix in the T/A Metals segment was primarily related to increased tooling costs in the third quarter of 2017 and the absence of low cost prototype part sales

recognized in the third quarter of 2016. Cost of sales also increased in the third quarter of 2017 compared to the third quarter of 2016 due to raw material commodity increases primarily in the T/A Metals segment. These increases to cost of sales were partially offset by the absence of $1.5 million in purchase accounting adjustments to cost of sales related to inventory step-up and lower material costs in the Technical Nonwovens segment in the third quarter of 2017 compared to the third quarter of 2016. Foreign currency translation increased cost of sales in the third quarter of 2017 compared to the third quarter of 2016 by $2.3 million, or 1.9%.

Cost of sales for the nine months ended September 30, 2017 increased by $80.7 million, or 25.5%, compared to the nine months ended September 30, 2016. The increase was primarily due to increased sales in the Technical Nonwovens segment of $88.0 million, primarily related to the Texel and Gutsche acquisitions, as well as increases in sales in all other segments aggregating to $16.1 million. Also contributing to the increase in cost of sales for the first nine months of 2017 compared to the first nine months of 2016 were higher overhead costs, primarily in the T/A Metals, Performance Materials segments and Technical Nonwovens

segments. Foreign currency translation lowered cost of sales in the first nine months of 2017 compared to the first nine months of 2016 by $1.6 million, or 0.5%.

Gross Profit

In thousands	Quarter Ended Q3-17	Q3-16	Percent Change	Nine Months Ended YTD-17	YTD-16	Percent Change
Gross profit	$39,980	$38,193	4.7 %	$123,657	$106,560	16.0 %
Gross margin	22.2 %	24.5 %		23.8 %	25.2 %	

Gross margin for the third quarter of 2017 was 22.2% compared to 24.5% in the third quarter of 2016. The T/A Metals segment negatively impacted consolidated gross margin by approximately 190 basis points, primarily related to increased raw material commodity costs, reduced customer pricing and unfavorable mix from increased tooling at low margins in the third quarter of 2017 and reduced prototype part sales at higher margins recognized in the third quarter of 2016. Additionally, the T/A Fibers segment negatively impacted consolidated gross margin by approximately 50 basis points, primarily as a result of lower customer pricing, including from part design changes, and higher raw material costs in the third quarter of 2017 compared to the third quarter of 2016. Consolidated gross margin was favorably impacted by approximately 30 basis points due to improved gross margin from the Technical Nonwovens segment, primarily due to the negative impact of a $1.6 million, or 110 basis point, purchase accounting adjustment relating to inventory step-up in the third quarter of 2016 from the acquisition of Texel, as well as lower raw material costs in the third quarter of 2017 compared to the third quarter of 2016. The Performance Materials segment had a minimal effect on consolidated gross margin in the third quarter of 2017 compared to the third quarter of 2016 with lower material costs offset by unfavorable mix.

Gross margin for the nine months ended September 30, 2017 was 23.8% compared to 25.2% in the nine months ended September 30, 2016. The T/A Metals segment negatively impacted consolidated gross margin by approximately 100 basis points, primarily related to increased raw material commodity costs, increased overhead expenses including operational inefficiencies, unfavorable product mix and reduced customer pricing in the first nine months of 2017 compared to the first nine months of 2016. The Technical Nonwovens segment negatively impacted consolidated gross margin by approximately 50 basis points, primarily related to unfavorable mix and purchase accounting adjustments relating to inventory step up and restructuring expenses. Additionally, the Performance Materials segment negatively impacted consolidated gross margin by approximately 10 basis points primarily related to higher margin termination buys in the first nine months of 2016 and unfavorable absorption of fixed costs in the first nine months of 2017. The T/A Fibers segment favorably impacted consolidated gross margin by approximately 10 basis points, primarily as a result of improved mix of products and decreased lower margin tooling volume in the first nine months of 2017 compared to the first nine months of 2016.

Selling, Product Development and Administrative Expenses

In thousands	Quarter Ended Q3-17	Q3-16	Percent Change	Nine Months Ended YTD-17	YTD-16	Percent Change
Selling, product development and administrative expenses	$24,819	$19,896	24.7 %	$73,697	$59,062	24.8 %
Percentage of sales	13.8 %	12.8 %		14.2 %	14.0 %	

Selling, product development and administrative expenses for the third quarter of 2017 increased by $4.9 million, or 100 basis points as a percentage of sales, compared to the third quarter of 2016. This increase was primarily related to the Technical Nonwovens segment due to the the acquisition of Gutsche on December 31, 2016, resulting in $1.9

million of increased expenses. There were no Gutsche expenses included in the Technical Nonwovens segment in the third quarter of 2016. All other selling, product development and administrative expenses increased $3.0 million, or 15.2%, in the third quarter of 2017 compared to the third quarter of 2016. This increase was primarily due to $1.1 million of expenses associated with the planned combination of the T/A Metals and T/A Fibers segments, and increased corporate consulting expenses in support of organic growth initiatives of $0.9 million, information technology expenses of $0.4 million, product trial runs of $0.3 million and other administrative expenses of $0.3 million in the third quarter of 2017 compared to the third quarter of 2016.

Selling, product development and administrative expenses for the nine months ended September 30, 2017 increased by $14.6 million, or 20 basis points as a percentage of sales, compared to the nine months ended September 30, 2016. This increase was primarily related to the Technical Nonwovens segment due to the acquisitions of Texel on July 7, 2016 and Gutsche on December 31, 2016 resulting in $10.9 million of selling, product development and administrative expenses, which included $2.5 million of incremental intangible amortization expense from TNW segment acquisitions. There were no Gutsche selling, product development

and administrative expenses included in the TNW segment in the first nine months of 2016 and no Texel selling, product development and administrative expenses included in the TNW segment in the first six months of 2016. All other selling, product development and administrative expenses increased $3.8 million, or 6.4%, in the first nine months of 2017 compared to the first nine months of 2016. This increase was primarily due to greater salaries and benefits of $2.3 million, $1.1 million of expenses associated with the planned combination of the T/A Metals and T/A Fibers segments, greater information technology expenses of $1.1 million, higher corporate consulting expenses in support of organic growth initiatives of $1.0 million and a non-cash long-lived asset impairment charge of $0.8 million in the first nine months of 2017 compared to the first nine months of 2016. These increases were partially offset by lower strategic initiatives expenses of $2.1 million and lower bad debt expense of $0.4 million in the first nine months of 2017 compared to the first nine months of 2016.

Interest Expense

	Quarter Ended			Nine Months Ended		
In thousands	Q3-17	Q3-16	Percent Change	YTD-17	YTD-16	Percent Change
Interest expense	$705	$389	81.2 %	$2,106	$643	227.5%
Weighted average interest rate	2.4 %	1.2 %		2.1 %	1.3 %	

The increase in interest expense for the quarter and nine months ended September 30, 2017 compared to the quarter and nine months ended September 30, 2016 was due to higher average borrowings outstanding used to finance both the Texel and Gutsche acquisitions on July 7, 2016 and December 31, 2016, respectively, and increased interest rates.

Other Income/Expense, net

	Quarter Ended			Nine Months Ended		
In thousands	Q3-17	Q3-16	Dollar Change	YTD-17	YTD-16	Dollar Change
Other expense (income), net	$408	$(218)	$ 626	$1,147	$(884)	$2,031

The decrease in other income, net, for the quarter and nine months ended September 30, 2017 compared to the quarter and nine months ended September 30, 2016 was primarily related to net foreign currency losses recognized with the revaluation of cash, trade payables and receivables and intercompany loans denominated in currencies other than the functional currencies of the Company's subsidiaries.

Income Taxes

The Company’s effective tax rate was 24.2% and 29.7% for the quarters ended September 30, 2017 and 2016, and 24.0% and 31.5% for the nine months ended September 30, 2017 and 2016, respectively. The difference in the Company’s effective tax rate for the quarter ended September 30, 2017 compared to the quarter ended September 30, 2016 was primarily related to a net tax benefit of $1.4 million from the completion of a tax audit in the third quarter of 2017, partially offset by $0.4 million of tax expense related to a repatriation of foreign cash back into the United States. The difference in the Company's effective tax rate for the nine months ended September 30, 2017 compared to the nine months ended September 30, 2016 was primarily related to tax benefits from stock compensation of $1.7 million for the nine months ended September 30, 2017 compared to $0.4 million for the nine months ended September 30, 2016, the net tax benefit of $1.4 million in the third quarter of 2017 related to the completion of a tax audit and a more favorable mix of income in lower taxed jurisdictions during the nine months ended September 30, 2017.
The Company and its subsidiaries file a consolidated federal income tax return, as well as returns required by various state and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities, including such major jurisdictions as the United States, France, Germany, China, the United Kingdom, the

Netherlands and Canada. With few exceptions, the Company is no longer subject to U.S. federal examinations for years before 2015, state and local examinations for years before 2012, and non-U.S. income tax examinations for years before 2003.

The Company’s effective tax rates in future periods could be affected by earnings being higher or lower in countries where tax rates differ from the United States federal tax rate, the relative impact of permanent tax adjustments on higher or lower earnings from domestic operations, changes in net deferred tax asset valuation allowances, stock vesting, the completion of acquisitions or divestitures, changes in tax rates or tax laws and the completion of tax projects and audits.

Segment Results

The following tables present net sales information for the key product and service groups included within each operating segment as well as other products and services and operating income by segment, for the quarter and nine months ended September 30, 2017 compared with the quarter and nine months ended September 30, 2016:

Net sales by segment:

	Quarter Ended		
In thousands	Q3-17	Q3-16	Dollar Change
Performance Materials Segment:			
Filtration	$19,946	$18,045	$1,901
Thermal Insulation	7,283	7,081	202
Life Sciences Filtration	2,318	3,705	(1,387)
Performance Materials Segment net sales	29,547	28,831	716
Technical Nonwovens Segment (1):			
Industrial Filtration	38,346	25,414	12,932
Advanced Materials (2)	34,960	26,870	8,090
Technical Nonwovens net sales	73,306	52,284	21,022
Thermal/Acoustical Metals Segment:			
Metal parts	41,522	39,807	1,715
Tooling	8,297	4,830	3,467
Thermal/Acoustical Metals Segment net sales	49,819	44,637	5,182
Thermal/Acoustical Fibers Segment:			
Fiber parts	34,739	35,073	(334)
Tooling	884	1,356	(472)
Thermal/Acoustical Fibers Segment net sales	35,623	36,429	(806)
Eliminations and Other (2)	(8,254)	(6,456)	(1,798)
Consolidated Net Sales	$180,041	$155,725	$24,316

In thousands	Nine Months Ended YTD-17	YTD-16	Dollar Change
Performance Materials Segment:			
Filtration	$58,047	$53,861	$4,186
Thermal Insulation	22,116	20,570	1,546
Life Sciences Filtration	7,436	10,749	(3,313)
Performance Materials Segment net sales	87,599	85,180	2,419
Technical Nonwovens Segment (1):			
Industrial Filtration	108,884	67,805	41,079
Advanced Materials (2)	90,438	43,526	46,912
Technical Nonwovens net sales	199,322	111,331	87,991
Thermal/Acoustical Metals Segment:			
Metal parts	124,043	117,578	6,465
Tooling	13,441	14,301	(860)
Thermal/Acoustical Metals Segment net sales	137,484	131,879	5,605
Thermal/Acoustical Fibers Segment:			
Fiber parts	116,430	107,629	8,801
Tooling	4,064	4,829	(765)
Thermal/Acoustical Fibers Segment net sales	120,494	112,458	8,036
Eliminations and Other (2)	(24,492)	(18,188)	(6,304)
Consolidated Net Sales	$520,407	$422,660	$97,747

Operating income by segment:

In thousands	Quarter Ended Q3-17 Operating Income	Operating Margin %	Q3-16 Operating Income	Operating Margin %	Dollar Change
Performance Materials	$3,063	10.4%	$3,283	11.4%	$(220)
Technical Nonwovens (1)	8,589	11.7%	5,662	10.8%	2,927
Thermal/Acoustical Metals	1,836	3.7%	5,451	12.2%	(3,615)
Thermal/Acoustical Fibers	8,716	24.5%	10,026	27.5%	(1,310)
Corporate Office Expenses	(7,043)		(6,125)		(918)
Consolidated Operating Income	$15,161	8.4%	$18,297	11.7%	$(3,136)

In thousands	Nine Months Ended YTD-17 Operating Income	Operating Margin %	YTD-16 Operating Income	Operating Margin %	Dollar Change
Performance Materials	$8,516	9.7%	$10,102	11.9%	$(1,586)
Technical Nonwovens (1)	19,792	9.9%	12,807	11.5%	6,985
Thermal/Acoustical Metals	7,453	5.4%	13,090	9.9%	(5,637)
Thermal/Acoustical Fibers	33,162	27.5%	30,980	27.5%	2,182
Corporate Office Expenses	(18,963)		(19,481)		518
Consolidated Operating Income	$49,960	9.6%	$47,498	11.2%	$2,462

(1) The Technical Nonwovens segment reports results of Texel and Gutsche for the period following the dates of acquisition of July 7, 2016 and December 31, 2016, respectively.

(2) Included in the Technical Nonwovens segment and Eliminations and Other is $6.5 million and $4.5 million in intercompany sales to the T/A Fibers segment for the quarters ended September 30, 2017 and 2016, respectively and $19.5 million and $13.6 million for the nine months ended September 30, 2017 and 2016, respectively.

Performance Materials

Segment net sales increased $0.7 million, or 2.5%, in the third quarter of 2017 compared to the third quarter of 2016. The increase was primarily due to higher net sales of filtration products of $1.9 million, or 10.5%, primarily due to improved demand and share gains particularly in North America and Europe. This increase was partially offset by decreased life sciences product net sales of $1.4 million in the third quarter of 2017 primarily as a result of lower liquid filtration product net sales of $0.8 million, primarily due to product termination buys of $0.6 million in the third quarter of 2016. Foreign currency translation had a favorable impact on net sales of $0.5 million, or 1.7%, in the third quarter of 2017 compared to the third quarter of 2016.

The Performance Materials segment reported operating income of $3.1 million, or 10.4% of net sales, in the third quarter of 2017, compared to operating income of $3.3 million, or 11.4% of net sales, in the third quarter of 2016. The decrease in operating income was primarily attributable to increased selling, product development and administrative expenses of $0.3 million, or 70 basis points as a percentage of segment net sales in the third quarter of 2017 compared to the third quarter of 2016. These increases were primarily related to increased product trial expenses of $0.3 million. Also contributing to the decrease in operating income was lower gross margin of 30 basis points due to an unfavorable mix of product sales, including higher margin product termination buys in the third quarter of 2016. Foreign currency translation had a minimal impact on operating income in the third quarter of 2017 compared with the third quarter of 2016.

Segment net sales increased $2.4 million, or 2.8%, in the first nine months of 2017 compared to the first nine months of 2016. The increase was primarily due to higher net sales of filtration products of approximately $4.2 million, or 7.8%, particularly in North America and Europe due to increased demand and share gains. Additionally, thermal insulation product net sales increased $1.5 million, or 7.5%, in the first nine months of 2017 compared to the first nine months of 2016, primary due to increased order activity in cryo liquid natural gas and energy related applications, and to a lesser extent, improved market demand in the insulation space. These increases were partially offset by lower sales of life sciences products of $3.3 million, or 30.8%, in the first nine months of 2017 compared to the first nine months of 2016, primarily the result of lower liquid filtration product net sales of $3.0 million, as there was product termination buys of $2.2 million in the first nine months of 2016. Foreign currency translation had a minimal impact on net sales in the first nine months of 2017 compared to the first nine months of 2016.

The Performance Materials segment reported operating income of $8.5 million, or 9.7% of net sales, in the first nine months of 2017, compared to operating income of $10.1 million, or 11.9% of net sales, in the first nine months of 2016. The decrease in operating income was primarily due to increased selling, product development and administrative expenses of $1.5 million, or 130 basis points as a percentage of net sales, including $0.8 million from a non-cash long-lived asset impairment charge recorded in the first quarter of 2017. Other increases included higher product trial expenses of $0.3 million, environmental expenses of $0.2 million and other selling, product development and administrative expenses of $0.2 million in the first nine months of 2017 compared to the first nine months of 2016. Also, gross profit decreased $0.1 million, primarily the result of reduction in gross margin of 80 basis points primarily due to unfavorable mix on higher margin product termination buys in the first nine months of 2016 and unfavorable absorption of fixed costs in the first nine months of 2017. Foreign currency translation had a minimal

impact on operating income in the first nine months of 2017 compared to the first nine months of 2016.

Technical Nonwovens

Segment net sales increased $21.0 million, or 40.2%, in the third quarter of 2017 compared to the third quarter of 2016 primarily due to increased net sales of $13.9 million from the Gutsche acquisition which occurred on December 31, 2016. The remaining increase in segment net sales of $7.1 million, or 13.6%, was from increased advanced materials products sales of $4.1 million, primarily due to increased sales of automotive rolled-good material for use in the T/A Fibers segment manufacturing process and increased geosynthetic product sales. Also, industrial filtration products sales increased $3.0 million due to improved global demand in power generation markets in the third quarter of 2017 compared to the third quarter of 2016. Foreign currency translation favorably impacted net sales by $1.0 million, or 1.9%, in the third quarter of 2017 compared to the third quarter of 2016.

The Technical Nonwovens segment reported operating income of $8.6 million, or 11.7% of net sales, in the third quarter of 2017, compared to $5.7 million, or 10.8% of net sales, in the third quarter of 2016. The increase in segment operating income of $2.9 million was principally from the acquisitions of Texel and Gutsche, which contributed a combined increase of $2.8 million of operating income. The third quarter of 2016 included the negative impact of a $1.6 million purchase accounting adjustment to

cost of sales related to inventory step-up. The increase in operating margin of 90 basis points was primarily attributable to improved gross margin of 170 basis points due to the negative impact of the $1.6 million, or 310 basis point, purchase accounting adjustment related to inventory step-up in the third quarter of 2016, partially offset by unfavorable product mix in the third quarter of 2017 compared to the third quarter of 2016. These increases to operating income was partially offset by higher segment selling, product development and administrative expenses of $2.4 million primarily related to the acquisitions of Texel and Gutsche, which contributed a combined increase of $2.3 million of selling, product development and administrative expenses. Segment selling, product development and administrative expenses negatively impacted operating margin by approximately 80 basis points, which included $0.5 million, or 70 basis points, of incremental intangibles amortization. Foreign currency translation had a minimal impact on operating income in the third quarter of 2017 compared to the third quarter of 2016.

Segment net sales increased $88.0 million in the first nine months of 2017 compared to the first nine months of 2016 primarily due to net sales of $73.1 million from the acquisitions of Texel and Gutsche which occurred on July 7, 2016 and December 31, 2016, respectively. The remaining increase in segment net sales of $14.9 million, or 13.4%, was from advanced materials products which increased $7.8 million, due to increased sales of automotive rolled-good material for use in the T/A Fibers segment manufacturing process, and industrial filtration products increased $7.1 million, primarily due to improved demand in domestic power generation markets. Foreign currency translation had a negative impact on segment net sales of $1.4 million, or 1.2%, in the first nine months of 2017 compared to the first nine months of 2016.

The Technical Nonwovens segment reported operating income of $19.8 million, or 9.9% of net sales, in the first nine months of 2017, compared to $12.8 million, or 11.5% of net sales, in the first nine months of 2016. The increase in segment operating income of $7.0 million was principally from the acquisitions of Texel and Gutsche, which contributed a combined increase of $5.6 million of operating income. The remaining increase in segment operating income of $1.4 million was due to increased sales from the segment's North America and China operations. The decrease in operating margin of 160 basis points was primarily attributable to increased selling, product development and administrative expenses of $11.2 million, or an increase of 160 basis points as a percentage of net sales, primarily due to increased Texel and Gutsche expenses of $11.2 million. Included in selling, product development and administrative expenses was incremental intangible amortization expense of $2.5 million from the acquired Texel and Gutsche businesses in the first nine months of 2017 compared to the first nine months of 2016. Gross margin was flat compared to prior year and had minimal impact on operating margin as lower raw material costs and decreased expenses for purchase accounting adjustments to cost of sales related to inventory step-up were offset by unfavorable product mix. Foreign currency translation had a minimal impact on operating income in the first nine months of 2017 compared to the first nine months of 2016.

Thermal/Acoustical Metals

Segment net sales increased $5.2 million, or 11.6%, in the third quarter of 2017, compared to the third quarter of 2016. Tooling net sales increased $3.5 million, or 71.8%, compared to the third quarter of 2016, due to the timing of new product launches. Automotive parts net sales increased $1.7 million, or 4.3%, compared to the third quarter of 2016 primarily due to increased demand and new platform launches from customers served by the Company's European and Chinese automotive operations, partially offset by lower demand on certain platforms in the Company's North American automotive operations. Foreign currency translation had a favorable impact of $1.1 million, or 2.5%, on segment net sales in the third quarter of 2017 compared to the third quarter of 2016.

The T/A Metals segment reported operating income of $1.8 million, or 3.7% of net sales, in the third quarter of 2017, compared to operating income of $5.5 million, or 12.2% of net sales, in the third quarter of 2016. The decrease in operating income of $3.6 million and operating margin of 850 basis points was primarily due to lower gross margin of

700 basis points due to increased raw material commodity costs, reduced customer pricing and unfavorable mix from increased lower margin tooling sales in the third quarter of 2017 and the absence of higher margin prototype part sales recognized in the third quarter of 2016. Also, to a lesser extent, operational inefficiencies contributed to lower gross margin in the third quarter of 2017 compared to the third quarter of 2016. The remaining 150 basis point reduction in operating margin was due to increased selling, product development and administrative expenses of $1.2 million, or 1.6% as a percentage of net sales, due to consolidation expenses of $0.8 million, or 160 basis points, primarily related to the planned combination of the T/A Metals and T/A Fibers segments, and higher salaries of $0.4 million in the third quarter of 2017 compared to the third quarter of 2016. Foreign currency translation had minimal impact on operating income in the third quarter of 2017 compared to the third quarter of 2016.

Segment net sales increased $5.6 million, or 4.3%, in the first nine months of 2017, compared to the first nine months of 2016. Automotive parts net sales increased $6.5 million, or 5.5%, primarily due to increased demand from customers served by the Company’s Chinese, European and to a lesser extent North American automotive operations. Foreign currency translation had a negative impact on parts net sales of $0.4 million, or 0.4%, in the first nine months of 2017 compared to the first nine months of 2016. Tooling net sales decreased $0.9 million, or 6.0%, compared to the first nine months of 2016 due to the timing of new product launches. Foreign currency translation had a minimal impact on tooling net sales in the first nine months of 2017 compared to the first nine months of 2016.

The T/A Metals segment reported operating income of $7.5 million, or 5.4% of net sales, in the first nine months of 2017, compared to operating income of $13.1 million, or 9.9% of net sales, in the first nine months of 2016. The decrease in operating margin of 450 basis points was primarily due to lower gross margin of 350 basis points due to increased raw material commodity costs, increased overhead expenses including operational inefficiencies, unfavorable product mix and reduced customer pricing in the first nine months of 2017 compared to the first nine months of 2016. The remaining 100 basis point reduction in operating margin was due to increased segment selling, product development and administrative expenses of $1.9 million in the first nine months of 2017 compared to the first nine months of 2016 related to consolidation expenses of $0.8 million, or 60 basis points, associated with the planned combination of the T/A Metals and T/A Fibers segments, increased salaries of $0.8 million and increased other administrative costs of $0.3 million. Overall, the first nine months of 2017 operating income and operating margin were negatively impacted by consolidation expenses of $0.9 million, or 70 basis points, and severance expenses of $0.7 million, or 50 basis points. Foreign currency translation had a minimal impact on operating income in the first nine months of 2017 compared to the first nine months of 2016.

Thermal/Acoustical Fibers

Segment net sales decreased $0.8 million, or 2.2%, in the third quarter of 2017 compared to the third quarter of 2016 due to decreased tooling net sales of $0.5 million due to timing of new product launches. Increased parts volume was offset by lower customer pricing, including approximately 1.5% of adjustments from part design changes, resulting in a decrease of parts net sales of $0.3 million, or 1.0%, in the third quarter of 2017 compared to the third quarter of 2016.

The T/A Fibers segment reported operating income of $8.7 million, or 24.5% of net sales, in the third quarter of 2017, compared to operating income of $10.0 million, or 27.5% of net sales, in the third quarter of 2016. The decrease in operating income as a percentage of segment net sales of 300 basis points was primarily due lower gross margin of 250 basis points in the third quarter of 2017 compared to the third quarter of 2016. The lower gross margin were primarily due to lower customer pricing, and to a lesser extent, increased raw material costs. Segment selling, product development and administrative expenses increased $0.2 million, or 60 basis points as a percentage of net sales, in the third quarter of 2017 compared to the third quarter of 2016 primarily due to expenses associated with the planned combination of the T/A Metals and T/A Fibers segments.

Segment net sales increased $8.0 million, or 7.1%, in the first nine months of 2017 compared to the first nine months of 2016. Automotive parts net sales increased $8.8 million, or 8.2%, due to higher consumer demand for vehicles in North America on Lydall's existing platforms. This increase was partially offset by a decrease in tooling net sales of $0.8 million in the first nine months of 2017 compared to the first nine months of 2016 due to timing of new product launches.

The T/A Fibers segment reported operating income of $33.2 million, or 27.5% of net sales, in the first nine months of 2017 compared to operating income of $31.0 million, or 27.5% of net sales, in the first nine months of 2016. The increase in operating income was attributable to increased parts net sales, partially offset by decreased gross margin of 30 basis points as a result of lower customer pricing partially offset by favorable mix of product sales. Segment selling, product development and administrative expenses increased $0.2 million compared to the prior year quarter primarily due to expenses associated with the planned combination of the T/A Metals and T/A Fibers segments.

Corporate Office Expenses

Corporate office expenses in the third quarter of 2017 were $7.0 million, compared to $6.1 million in the third quarter of 2016. The increase of $0.9 million was primarily due to increased consulting expenses in support of organic growth initiatives in the third quarter of 2017 compared to the third quarter of 2016.

Corporate office expenses for the first nine months of 2017 were $19.0 million, compared to $19.5 million in the first nine months of 2016. The decrease of $0.5 million was primarily due to decreased corporate strategic initiatives expense of $2.1 million, partially offset by increased consulting expenses in support of organic growth initiatives of $1.0 million, increased salaries and benefits of $0.4 million and increased other administrative expenses of $0.2 million in the first nine months of 2017 compared to the first nine months of 2016.

Liquidity and Capital Resources

The Company assesses its liquidity in terms of its ability to generate cash to fund operating, investing and financing activities. The principal source of liquidity is operating cash flows. In addition to operating cash flows, other significant factors that affect the overall management of liquidity include capital expenditures, investments in businesses, strategic transactions, income tax payments, debt service payments, outcomes of contingencies, foreign currency exchange rates and pension funding. The Company manages worldwide cash requirements by considering available funds among domestic and foreign subsidiaries. The Company expects to finance its 2017 operating cash and capital spending requirements from existing cash balances, cash provided by operating activities and through borrowings under the Amended Credit Facility, as needed.

At September 30, 2017, the Company held $64.7 million in cash and cash equivalents, including $11.7 million in the U.S. with the remaining held by foreign subsidiaries.

Financing Arrangements

On July 7, 2016, the Company amended its $100 million senior secured revolving credit facility (“Amended Credit Facility”) which increased the available borrowing from $100 million to $175 million, added a fourth lender and changed the maturity date from January 31, 2019 to July 7, 2021. The Amended Credit Facility is secured by substantially all of the assets of the Company. The Company entered into this Amended Credit Facility in part to fund a majority of the 2016 acquisitions and provide additional capacity to support organic growth programs, fund capital investments and continue pursuits of attractive acquisitions.

Under the terms of the Amended Credit Facility, the lenders are providing a $175 million revolving credit facility to the Company, under which the lenders may make revolving loans and issue letters of credit to or for the benefit of the Company and its subsidiaries. The Company may request the Amended Credit Facility be increased by an aggregate amount not to exceed $50 million through an accordion feature, subject to specified conditions.

The Amended Credit Facility contains a number of affirmative and negative covenants, including financial and operational covenants. The Company is required to meet a minimum interest coverage ratio. The interest coverage ratio requires that, at the end of each fiscal quarter, the ratio of consolidated EBIT to Consolidated Interest Charges, both as defined in the Amended Credit Facility, may not be less than 2.0 to 1.0 for the immediately preceding 12 month period. In addition, the Company must maintain a Consolidated Leverage Ratio, as defined in the Amended Credit Facility, as of the end of each fiscal quarter of no greater than 3.0 to 1.0. The Company must also meet minimum consolidated EBITDA as of the end of each fiscal quarter for the preceding 12 month period of $30 million.

Interest is charged on borrowings at the Company’s option of either: (i) Base Rate plus the Applicable Rate, or (ii) the Eurodollar Rate plus the Applicable Rate. The Base Rate is a fluctuating rate equal to the highest of (a) the federal funds rate plus 0.50%, (b) the prime rate as set by Bank of America, and (c) the Eurocurrency Rate plus 1.00%. The Eurocurrency Rate means (i) if denominated in LIBOR quoted currency, a fluctuating LIBOR per annum rate equal to the London Interbank Offered Rate; (ii) if denominated in Canadian Dollars, the rate per annum equal to the Canadian Dealer Offered Rate; or (iii) the rate per annum as designated with respect to such alternative currency at the time such alternative currency is approved by the Lenders. The Applicable Rate is determined based on the Company’s Consolidated Leverage Ratio (as defined in the Amended Credit Agreement). The Applicable Rate added to the Base Rate Committed Loans ranges from 15 basis points to 100 basis points, and the Applicable Rate added to Eurocurrency Rate Committed Loans and Letters of Credit ranges from 75 basis points to 175 basis points. The Company pays a quarterly fee ranging from 17.5 basis points to 30 basis points on the unused portion of the $175 million available under the Amended Credit Facility. At September 30, 2017, the Company had borrowing availability

of $78.4 million under the Amended Credit Facility net of $92.6 million of borrowings outstanding and standby letters of credit outstanding of $4.0 million.

In addition to the amounts outstanding under the Amended Credit Facility, the Company has various acquired foreign credit facilities totaling approximately $11.6 million. At September 30, 2017, the Company's foreign subsidiaries had $0.1 million in borrowings outstanding as well as $3.0 million in standby letters of credit outstanding.

In April 2017, the Company entered into a three-year interest rate swap agreement transacted with a bank which converts the interest on the first notional $60.0 million of the Company's one-month LIBOR-based borrowings under its revolver loan from a variable rate, plus the borrowing spread, to a fixed rate of 1.58% plus the borrowing spread. The notional amount reduces quarterly by $5.0 million through March 31, 2020. The interest rate swap agreement was accounted for as cash flow hedge.

Operating Cash Flows

Net cash provided by operating activities in the first nine months of 2017 was $46.2 million compared with $47.4 million in the first nine months of 2016. In the first nine months of 2017, net income and non-cash adjustments were $59.5 million compared

to $50.7 million in the first nine months of 2016. Since December 31, 2016, net operating assets and liabilities increased by $13.4 million, primarily due to increases of $12.1 million in accounts receivable, $11.8 million in inventories and $6.7 million in other, net, partially offset by an increase of $18.1 million in accounts payable. The increase in accounts receivable was primarily due to higher net sales in the third quarter of 2017 compared to the fourth quarter of 2016 within the Technical Nonwovens and Thermal/Acoustical Fibers and Metals segments. The increase in inventory was primarily due to increases in net tooling inventory in preparation of new automotive platform launches. The increase in other, net, was primarily due to a $3.8 million decrease in benefit plan liabilities resulting from cash contributions to the Company's domestic pension plan as well as a $2.5 million increase in taxes receivable mainly due to the timing of income tax payments within our foreign operations. The increase in accounts payable was primarily driven by the timing of vendor payments within the Technical Nonwovens segment and payments for capital expenditures within the first nine months of 2017.

Investing Cash Flows

In the first nine months of 2017, net cash used for investing activities was $20.3 million compared to $120.1 million in the first nine months of 2016. Investing activities in the first nine month of 2017 consisted of cash outflows of $19.9 million for capital expenditures and a final purchase price adjustment of $0.3 million related to the Gutsche acquisition. Investing activities in the first nine months of 2016 consisted of cash outflows of $101.1 million to fund the Texel acquisition, net of cash acquired of $1.6 million and $19.0 million for capital expenditures. Capital spending for 2017 is expected to be approximately $30 million to $35 million.

Financing Cash Flows

In the first nine months of 2017, net cash used for financing activities was $37.9 million compared to net cash provided by financing activities of $74.5 million in the first nine months of 2016. The Company received proceeds of $85.0 million from borrowings under its Amended Credit Facility in the third quarter of 2016 to fund the acquisition of Texel. Debt repayments were $35.7 million and $10.3 million in the first nine months of 2017 and 2016, respectively. The Company acquired $2.6 million and $0.8 million in company stock through its equity compensation plans during the first nine months of 2017 and 2016, respectively. The Company received $0.4 million from the exercise of stock options in the first nine months of 2017, compared to $0.6 million in the first nine months of 2016.

Critical Accounting Estimates

The preparation of the Company’s consolidated financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Footnote 1 of the “Notes to Consolidated Financial Statements” and Critical Accounting Estimates in Item 7 of the Company’s Annual Report on Form 10-K for the year ended December 31, 2016, and the “Notes to Condensed Consolidated Financial Statements” of this report describe the significant accounting policies and critical accounting estimates used in the preparation of the consolidated financial statements. The Company’s management is required to make judgments and estimates about the effect of matters that are inherently uncertain. Actual results could differ from management’s estimates. There have been no significant changes in the Company’s critical accounting estimates during the quarter or nine months ended September 30, 2017, other than described below. The Company continues to monitor the recoverability of the long-lived assets at the Company’s DSM Solutech B.V. (“Solutech”) operation as a result of historical operating losses and negative cash flows. Future cash flows are dependent on the success of commercialization efforts of Solutech products by OEMs, the quality of Solutech products and technology advancements and management’s ability to manage costs. In the event that Solutech’s cash flows in the future do not

meet current expectations, management, based upon conditions at the time, would consider taking actions as necessary to improve cash flow. A thorough analysis of all the facts and circumstances existing at the time would need to be performed to determine if recording an impairment loss was appropriate.

Impairment of Long-Lived Assets

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on the Company's judgment and estimates of undiscounted future cash flows resulting from the use of the assets and their eventual disposition. Measurement of an impairment loss for long-lived assets that management expects to hold and use is based on the fair value of the assets. If the carrying values of the assets are determined to be impaired, then the carrying values are reduced to their estimated fair values. The fair values of the impaired assets are determined based on applying a combination of market approaches, including independent appraisals when appropriate, the income approach, which utilizes cash flow projections, and the cost approach.

During the first quarter of 2017, the Company tested for impairment a discrete long-lived asset group in the Performance Materials segment with a carrying value of $1.3 million, as a result of indicators of possible impairment. To determine the recoverability of this asset group, the Company completed an undiscounted cash flow analysis and compared it to the asset group carrying value. This analysis was primarily dependent on the expectations for net sales over the estimated remaining useful life of the underlying asset group. The impairment test concluded that the asset group was not recoverable as the resulting undiscounted cash flows were less than their carrying amount. Accordingly, the Company determined the fair value of the asset group to assess if there was an impairment. Determining fair value is judgmental in nature and requires the use of significant estimates and assumptions considered to be Level 3 inputs. To determine the estimated fair value of the asset group the Company used the market approach. Under the market approach, the determination of fair value considered market conditions including an independent appraisal of the components of the asset group. The estimated fair value of the asset group was $0.5 million, below its carrying value of $1.3 million, which resulted in a long-lived asset impairment charge of $0.8 million included in selling, product development and administrative expenses during the quarter ended March 31, 2017. This long-lived asset group, with a net book value of $0.5 million, is classified as held for sale as of September 30, 2017.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Lydall’s limited market risk exposures relate to changes in foreign currency exchange rates and interest rates.

Foreign Currency Risk

The Company has operations in Germany, France, the United Kingdom, the Netherlands, China and Canada, in addition to the United States. As a result of this, the Company’s financial results are affected by factors such as changes in foreign currency exchange rates or economic conditions in the foreign markets where the Company manufactures and distributes its products. The Company’s currency exposure is to the US Dollar, the Euro, the British Pound Sterling, the Japanese Yen, the Chinese Yuan, the Hong Kong Dollar and the Canadian Dollar. The Company’s foreign and domestic operations attempt to limit foreign currency exchange transaction risk by completing transactions in local functional currencies, whenever practicable. The Company may periodically enter into foreign currency forward exchange contracts to mitigate exposure to foreign currency volatility. In addition, the Company utilizes bank loans and other debt instruments throughout its operations. To mitigate foreign currency risk, such debt is denominated primarily in the functional currency of the operation maintaining the debt.
The Company also has exposure to fluctuations in currency risk on intercompany loans that the Company makes to certain of its subsidiaries. The Company may periodically enter into foreign currency forward contracts which are intended to offset the impact of foreign currency movements on the underlying intercompany loan obligations.

Interest Rate Risk

The Company’s interest rate exposure is most sensitive to fluctuations in interest rates in the United States and Europe, which impact interest paid on its debt. The Company has debt with variable rates of interest based generally on LIBOR. Increases in interest rates could therefore significantly increase the associated interest payments that the Company is required to make on this debt. From time to time, the Company may enter into interest rate swap agreements to manage interest rate risk. The Company has assessed its exposure to changes in interest rates by analyzing the sensitivity to Lydall’s earnings assuming various changes in market interest rates. Assuming a hypothetical increase of one percentage point in interest rates on the variable interest rate debt as of September 30, 2017, the Company’s net income would decrease by an estimated $0.4 million over a twelve-month period.

In April 2017, the Company entered into a three-year interest rate swap agreement transacted with a bank which converts the interest on the first notional $60.0 million of the Company's one-month LIBOR-based borrowings under its revolver loan from a variable rate, plus the borrowing spread, to a fixed rate of 1.58% plus the borrowing spread. The notional amount reduces quarterly by $5.0 million through March 31, 2020.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

The Company’s management, including the Company’s President and Chief Executive Officer (the “CEO”) and the Executive Vice President and Chief Financial Officer (the "CFO"), conducted an evaluation of the effectiveness of the design and operation of the Company’s disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”)). There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives. The Company’s disclosure controls and procedures 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 rules and forms of the Securities and Exchange Commission (the "SEC"), and that such information is accumulated and communicated to management of the Company, with the participation of its CEO and CFO, as appropriate to allow timely decisions regarding required disclosure. Based on that evaluation, the CEO and CFO have concluded that the Company’s disclosure controls and procedures were effective as of September 30, 2017 at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

The Company completed the acquisitions of Texel and Gutsche on July 7, 2016 and December 31, 2016, respectively. Management considers these transactions to be material to the Company’s financial statements. We are currently in the process of evaluating the existing controls and procedures of Texel and Gutsche and integrating the businesses into our Section 404 compliance program

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under the Sarbanes-Oxley Act of 2002 (the “Act”) and the applicable rules and regulations under such Act. The Company will report on its assessment of the effectiveness of internal control over financial reporting of its consolidated operations (including the Texel and Gutsche businesses) within the time period provided by the Act and the applicable SEC rules and regulations concerning business combinations.

Subject to the foregoing, there have not been any changes in the Company’s internal control over financial reporting (as defined in Rule 13a-15(f) and Rule 15d-15(f) under the Exchange Act) during the quarter ended September 30, 2017 that materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

PART II. OTHER INFORMATION
Item 1. Legal Proceedings

The Company is subject to legal proceedings, claims, investigations and inquiries that arise in the ordinary course of business such as, but not limited to, actions with respect to commercial, intellectual property, employment, personal injury, and environmental matters. The Company believes that it has meritorious defenses against the claims currently asserted against it and intends to defend them vigorously. While the outcome of litigation is inherently uncertain and the Company cannot be sure that it will prevail in any of the cases, subject to the matter referenced below, the Company is not aware of any matters pending that are expected to have a material adverse effect on the Company's business, financial position, results of operations or cash flows.
As previously disclosed, Lydall Gerhardi GmbH Co. & KG ("Lydall Gerhardi"), an indirect wholly-owned subsidiary of Lydall, Inc. and part of Lydall's Thermal/Acoustical Metals reporting segment, has cooperated with the German Federal Cartel Office, Bundeskartellamt ("German Cartel Office") since May 2014 in connection with an investigation relating to violations of German anti-trust laws by and among certain European automotive heat shield manufacturers, including Lydall Gerhardi.
In December 2016, Lydall Gerhardi agreed in principle with the German Cartel Office to pay a settlement amount of €3.3 million. The Company recorded the expense of €3.3 million (approximately $3.5 million U.S. Dollars) in December 2016. In July 2017, Lydall Gerhardi entered into a formal settlement agreement with the German Cartel Office, and remitted payment in full in August 2017 of €3.3 million (approximately $3.9 million U.S. Dollars), definitively concluding this matter.

In the fourth quarter of 2016, as part of a groundwater discharging permitting process, water samples collected from wells and process water basins at the Company's Rochester New Hampshire manufacturing facility, within the Performance Materials segment, showed concentrations of Perfluorinated Compounds ("PFCs") in excess of state ambient groundwater quality standards.
In January 2017, the Company received a notification from the State of New Hampshire Department of Environmental Services ("NHDES") naming Lydall Performance Materials, Inc. a responsible party with respect to the discharge of regulated contaminants and as such, is required to take action to investigate and remediate the impacts in accordance with standards established by the NHDES. The Company is conducting a site investigation, the scope of which has been reviewed by the NHDES, in order to assess the extent of potential soil and groundwater contamination and develop a remedial action. Based on input received from NHDES in March 2017 with regard to the scope of the site investigation, the Company recorded $0.2 million of expense in the first quarter of 2017 associated with the expected costs of conducting this site investigation. Based on additional information obtained through the results of its site investigation and correspondence with NHDES in September 2017, no additional expense was recorded in the third quarter of 2017. In the fourth quarter of 2017, the Company expects to submit its final site investigation report to the NHDES. The Company does not know the scope or extent of its future obligations, if any, that may arise from the NHDES review of the site investigation report and therefore is unable to estimate the cost of any required future corrective actions. During the nine months ended September 30, 2017, the environmental liability of $0.2 million has been reduced by $0.1 million reflecting payments made to vendors, resulting in a balance of $0.1 million at September 30, 2017. While the site investigation is nearly complete, the Company cannot assure that costs will not exceed the current estimates nor that any future corrective action at this location would not have a material effect on the Company's financial condition, results of operations or liquidity. Provisions for such matters are charged to expense when it is probable that a liability has been incurred and reasonable estimates of the liability can be made. Estimates of environmental liabilities are based on a variety of matters, including, but not limited to, the stage of investigation, the stage of the remedial design, evaluation of existing remediation technologies, and presently enacted laws and regulations. In future periods, a number of factors could significantly impact any estimates of environmental remediation costs.

Item 1A. Risk Factors

See Part I, Item 1A of the Company's Annual Report on Form 10-K for the year ended December 31, 2016, as updated by Part I, Item 1. Legal Proceedings of this report. The risks described in the Annual Report on Form 10-K, and the "Cautionary Note Concerning Forward-Looking Statements" in this report, are not the only risks faced by the Company. Additional risks and uncertainties not currently known or that are currently judged to be immaterial may also materially affect the Company's business, financial position, results of operations or cash flows.

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

During the three months ended September 30, 2017, the Company acquired 2,044 shares of common stock through withholding, pursuant to provisions in agreements with recipients of restricted stock granted under the Company's equity compensation plans, in which the Company withholds that number of shares having fair value equal to each recipient's minimum tax withholding due.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Number of Shares That May Yet Be Purchased Under the Program
July 1, 2017 - July 31, 2017	—	$ —	—	—
August 1, 2017 - August 31, 2017	341	$ 47.55	—	—
September 1, 2017 - September 30, 2017	1,703	$ 46.25	—	—
	2,044	$ 46.47	—	—

Item 6. Exhibits

Exhibit Number	Description
31.1	Certification Pursuant to Rule 13a-14(a) and Rule 15d-14(a) under the Securities Exchange Act of 1934, of principal executive officer, filed herewith.
31.2	Certification Pursuant to Rule 13a-14(a) and Rule 15d-14(a) under the Securities Exchange Act of 1934, of principal financial officer, filed herewith.
32.1	Certifications Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document

SIGNATURE

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.

LYDALL, INC.

October 31, 2017 By: /s/ Scott M. Deakin

Scott M. Deakin
Executive Vice President and Chief Financial Officer
(On behalf of the Registrant and as
Principal Financial Officer)

LYDALL, INC.
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