

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

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2021

OR

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

For the transition period from _____ to _____

Commission file number: 001-36481

ASPEN AEROGELS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

30 Forbes Road, Building B
Northborough, Massachusetts
(Address of principal executive offices)

04-3559972
(I.R.S. Employer
Identification No.)

01532
(Zip Code)

Registrant's telephone number, including area code: (508) 691-1111

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

Title of each class	Trading Symbol	Name of exchange on which registered
Common Stock, par value \$0.00001 per share	ASPN	The New York Stock Exchange

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

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

As of May 3, 2021, the registrant had 28,350,272 shares of common stock outstanding.

ASPEN AEROGELS, INC.

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Trademarks, Trade Names and Service Marks

We own or have rights to use "Aspen Aerogels," "Cryogel," "Pyrogel," "Spaceloft," "PyroThin," the Aspen Aerogels logo and other trademarks, service marks and trade names of Aspen Aerogels, Inc. appearing in this Quarterly Report on Form 10-Q. Solely for convenience, the trademarks, service marks and trade names referred to in this report are presented without the ® and TM symbols, but such references are not intended to indicate, in any way, that the owner thereof will not assert, to the fullest extent under applicable law, such owner's rights to these trademarks, service marks and trade names. This report contains additional trademarks, service marks and trade names of other companies, which, to our knowledge, are the property of their respective owners.

PART I — FINANCIAL INFORMATION

Item 1. Financial Statements.

ASPEN AEROGELS, INC.
 Consolidated Balance Sheets
 (Unaudited)

	March 31, 2021	December 31, 2020
(In thousands, except share and per share data)		
Assets		
Current assets:		
Cash and cash equivalents	\$ 17,219	\$ 16,496
Accounts receivable, net of allowances of \$199 and \$442	20,668	15,698
Inventories	10,847	13,099
Prepaid expenses and other current assets	1,152	1,830
Total current assets	49,886	47,123
Property, plant and equipment, net	45,747	46,739
Operating lease right-of-use assets	4,109	3,478
Other long-term assets	132	84
Total assets	<u>\$ 99,874</u>	<u>\$ 97,424</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 6,968	\$ 5,351
Accrued expenses	5,306	3,884
Current portion of long-term debt	2,854	1,609
Current portion of prepayment liability	4,562	—
Deferred revenue	2,061	2,037
Operating lease liabilities	1,152	1,046
Total current liabilities	22,903	13,927
Prepayment liability	5,000	9,555
Long-term debt	817	2,059
Operating lease liabilities long-term	4,077	3,597
Other long-term liabilities	434	434
Total liabilities	<u>33,231</u>	<u>29,572</u>
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, \$0.00001 par value; 5,000,000 shares authorized, no shares issued and outstanding at March 31, 2021 and December 31, 2020	—	—
Common stock, \$0.00001 par value; 125,000,000 shares authorized, 28,343,535 and 27,821,685 shares issued and outstanding at March 31, 2021 and December 31, 2020, respectively	—	—
Additional paid-in capital	580,852	575,811
Accumulated deficit	(514,209)	(507,959)
Total stockholders' equity	66,643	67,852
Total liabilities and stockholders' equity	<u>\$ 99,874</u>	<u>\$ 97,424</u>

See accompanying notes to unaudited consolidated financial statements.

ASPEN AEROGELS, INC.
Consolidated Statements of Operations
(Unaudited)

	Three Months Ended March 31,	
	2021	2020
	(In thousands, except share and per share data)	
Revenue:		
Product	\$ 28,056	\$ 28,307
Research services	41	112
Total revenue	28,097	28,419
Cost of revenue:		
Product	24,129	22,399
Research services	12	40
Gross profit	3,956	5,980
Operating expenses:		
Research and development	2,442	2,227
Sales and marketing	3,301	3,324
General and administrative	4,388	3,515
Total operating expenses	10,131	9,066
Loss from operations	(6,175)	(3,086)
Interest expense, net	(75)	(83)
Total interest expense, net	(75)	(83)
Net loss	\$ (6,250)	\$ (3,169)
Net loss per share:		
Basic and diluted	\$ (0.22)	\$ (0.13)
Weighted-average common shares outstanding:		
Basic and diluted	27,983,470	25,194,292

See accompanying notes to unaudited consolidated financial statements.

ASPEN AEROGELS, INC.

Consolidated Statements of Stockholders' Equity

(Unaudited)

(In thousands, except share data)

	Preferred Stock \$0.00001 Par Value		Common Stock \$0.00001 Par Value		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Value	Shares	Value			
Balance at December 31, 2020	—	\$ —	27,821,685	\$ —	\$ 575,811	\$ (507,959)	\$ 67,852
Net loss	—	—	—	—	—	(6,250)	(6,250)
Stock compensation expense	—	—	—	—	976	—	976
Vesting of restricted stock units	—	—	246,737	—	(2,613)	—	(2,613)
Proceeds from employee stock option exercises	—	—	48,056	—	463	—	463
Proceeds from at-the-market offering, net of commissions and fees of \$193 and issuance costs of \$17	—	—	305,182	—	6,215	—	6,215
Forfeiture of performance-based restricted stock	—	—	(78,125)	—	—	—	—
Balance at March 31, 2021	<u>—</u>	<u>\$ —</u>	<u>28,343,535</u>	<u>\$ —</u>	<u>\$ 580,852</u>	<u>\$ (514,209)</u>	<u>\$ 66,643</u>

	Preferred Stock \$0.00001 Par Value		Common Stock \$0.00001 Par Value		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Value	Shares	Value			
Balance at December 31, 2019	—	\$ —	24,302,504	\$ —	\$ 545,140	\$ (486,150)	\$ 58,990
Net loss	—	—	—	—	—	(3,169)	(3,169)
Stock compensation expense	—	—	—	—	992	—	992
Vesting of restricted stock units	—	—	336,951	—	(1,195)	—	(1,195)
Proceeds from underwritten public offering, net of underwriting discounts and commissions of \$1,093 and issuance costs of \$285	—	—	1,955,000	—	14,751	—	14,751
Balance at March 31, 2020	<u>—</u>	<u>\$ —</u>	<u>26,594,455</u>	<u>\$ —</u>	<u>\$ 559,688</u>	<u>\$ (489,319)</u>	<u>\$ 70,369</u>

See accompanying notes to unaudited consolidated financial statements.

ASPEN AEROGELS, INC.
Consolidated Statements of Cash Flows
(Unaudited)

	Three Months Ended	
	March 31,	
	2021	2020
	(In thousands)	
Cash flows from operating activities:		
Net loss	\$ (6,250)	\$ (3,169)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	2,638	2,563
Amortization of debt issuance costs	3	—
Provision for bad debt	(95)	—
Stock-compensation expense	976	992
Reduction in the carrying amount of operating lease right-of-use assets	257	243
Changes in operating assets and liabilities:		
Accounts receivable	(4,875)	11,799
Inventories	2,252	(4,664)
Prepaid expenses and other assets	630	181
Accounts payable	1,432	(3,732)
Accrued expenses	1,422	(4,441)
Deferred revenue	31	(851)
Operating lease liabilities	(293)	(274)
Net cash used in operating activities	<u>(1,872)</u>	<u>(1,353)</u>
Cash flows from investing activities:		
Capital expenditures	(1,470)	(927)
Net cash used in investing activities	<u>(1,470)</u>	<u>(927)</u>
Cash flows from financing activities:		
Proceeds from underwritten public offering, net of underwriting discounts and commissions of \$1,093	—	15,036
Issuance costs from underwritten public offering	—	(285)
Repayments of borrowings under line of credit, net	—	(3,123)
Proceeds from employee stock option exercises	463	—
Payments made for employee restricted stock tax withholdings	(2,613)	(1,195)
Proceeds from at-the-market offering, net of commissions and fees of \$193	6,232	—
Issuance costs from at-the-market offering	(17)	—
Net cash provided by financing activities	<u>4,065</u>	<u>10,433</u>
Net increase in cash	723	8,153
Cash and cash equivalents at beginning of period	16,496	3,633
Cash and cash equivalents at end of period	<u>\$ 17,219</u>	<u>\$ 11,786</u>
Supplemental disclosures of cash flow information:		
Interest paid	\$ 65	\$ 84
Income taxes paid	\$ —	\$ —
Supplemental disclosures of non-cash activities:		
Right-of-use assets obtained in exchange for new operating lease liabilities	\$ 888	\$ 152
Changes in accrued capital expenditures	<u>\$ 176</u>	<u>\$ (147)</u>

See accompanying notes to unaudited consolidated financial statements.

ASPEN AEROGELS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(UNAUDITED)

(1) Description of Business and Basis of Presentation

Nature of Business

Aspen Aerogels, Inc. (the Company) is an aerogel technology company that designs, develops and manufactures innovative, high-performance aerogel insulation used primarily in the energy infrastructure and building materials markets. In addition, the Company is developing high-value applications for its aerogel technology in the electric vehicle market. The Company also conducts research related to aerogel technology supported by funding from several agencies of the U.S. government and other institutions in the form of research contracts. The Company has decided to cease efforts to secure additional funded research contracts and to wind down existing contract research activities.

The Company maintains its corporate offices in Northborough, Massachusetts. The Company has three wholly owned subsidiaries: Aspen Aerogels Rhode Island, LLC, Aspen Aerogels Germany, GmbH and Aspen Aerogels Georgia, LLC.

Liquidity

During the three months ended March 31, 2021, the Company incurred a net loss of \$6.3 million, used \$1.9 million of cash in operations, used \$1.5 million of cash for capital expenditures and received net proceeds of \$6.2 million through an at-the-market offering of the Company's common stock. At March 31, 2021, the Company had cash and cash equivalents of \$17.2 million, total debt of \$3.7 million, a \$4.6 million current prepayment liability (see note 9), and no outstanding borrowings under its revolving line of credit (see note 7). After giving effect to \$1.5 million of outstanding letters of credit, the amount available to the Company at March 31, 2021 under the revolving line of credit was \$13.1 million. The existing revolving line of credit matures on April 28, 2022.

The Company is increasing investment in the research and development of next-generation aerogel products and manufacturing process technologies. The Company is continuing to develop aerogel products and technologies for the electric vehicle market. The Company believes that the commercial potential for the Company's technology in the electric vehicle market is significant. Accordingly, the Company plans to continue to hire additional personnel, incur additional operating expenses, and incur capital expenditures to expand silica aerogel manufacturing capacity, build an automated thermal barrier fabrication operation, enhance research and development laboratory facilities and equipment, and construct a battery materials facility, among other items.

The Company expects its existing cash balance and the amount anticipated to be available under the existing revolving line of credit will be sufficient to support current operating requirements and research and development activities. However, the Company plans to supplement its cash balance and available credit with equity financings, debt financings, customer prepayments, or technology licensing fees to provide the capital necessary to fund the incremental operating expenses and capital expenditures required to support the evolving commercial opportunity in the electric vehicle market and other strategic business opportunities.

Unaudited Interim Financial Information

The accompanying unaudited interim consolidated financial statements include the accounts of the Company and have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Certain information and disclosures normally included in the consolidated financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. As such, the information included in this Quarterly Report on Form 10-Q should be read in conjunction with the audited consolidated financial statements and accompanying notes in our Annual Report on Form 10-K for the year ended December 31, 2020 (the Annual Report), filed with the U.S. Securities and Exchange Commission on March 12, 2021.

In the opinion of the Company's management, the unaudited interim consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and include all adjustments that are of a normal recurring nature and necessary for the fair statement of the Company's financial position as of March 31, 2021 and the results of its operations and stockholders' equity for the three months ended March 31, 2021 and 2020 and the cash flows for the three month periods then ended. The Company has evaluated subsequent events through the date of this filing.

The Company's results of operations for the three months ended March 31, 2021 are not necessarily indicative of the results to be expected for the year ending December 31, 2021 or any other period. In addition, the Company is uncertain of the continued duration and severity of the COVID-19 pandemic and the impact it will have on the Company's results of operations for the year ending December 31, 2021 or any other period.

(2) Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements, which have been prepared in accordance with U.S. GAAP, include the accounts of the Company and its wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of the consolidated financial statements requires the Company to make a number of estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Significant items subject to such estimates and assumptions include allowances for doubtful accounts, sales returns and allowances, product warranty costs, inventory valuation, the carrying amount of property and equipment, stock-based compensation and deferred income taxes. The Company evaluates its estimates and assumptions on an on-going basis using historical experience and other factors, including current economic conditions, which are believed to be reasonable under the circumstances. Management adjusts such estimates and assumptions when facts and circumstances warrant. Illiquid credit markets, volatile equity markets and declines in business investment can increase the uncertainty inherent in such estimates and assumptions. As future events and their effects cannot be determined with precision, actual results could differ significantly from these estimates. Changes in these estimates resulting from continuing changes in the economic environment will be reflected in the financial statements in future periods.

Cash and Cash Equivalents

Cash equivalents include short-term, highly liquid instruments, which consist of money market accounts. All cash and cash equivalents are maintained with major financial institutions in North America. Deposits with these financial institutions may exceed the amount of insurance provided on such deposits; however, these deposits typically may be redeemed upon demand and, therefore, bear minimal risk.

Concentration of Credit Risk

Financial instruments, which potentially expose the Company to concentrations of credit risk, consist principally of accounts receivable. The Company maintains an allowance for doubtful accounts based on its assessment of the collectability of accounts receivable. The Company reviews the allowance for doubtful accounts quarterly. During the three months ended March 31, 2021, the Company recorded a reduction for estimated customer uncollectible accounts receivable of \$0.1 million and had collections of \$0.1 million of previously reserved customer accounts receivables. The Company did not record a charge for uncollectible accounts receivable during the three months ended March 31, 2020.

Revenue Recognition

The Company recognizes revenue in accordance with Accounting Standards Codification 606, Revenue from Contracts with Customers (ASC 606). See note 3 for further details.

Leases

The Company accounts for its leases in accordance with Accounting Standards Update (ASU) 2016-02 (Topic 842). See note 10 for further details.

Stock-based Compensation

Stock-based compensation expense is measured at the grant date based on the fair value of the award. Expense is recognized on a straight-line basis over the requisite service period for all awards with service conditions. For performance-based awards, the grant date fair value is recognized as expense when the condition is probable of being achieved and then on a graded basis over the requisite service period. The Company uses the Black-Scholes option-pricing model to determine the fair value of service-based option awards, which requires a number of complex and subjective assumptions including fair value of the underlying security, the expected volatility of the underlying security, a risk-free interest rate and the expected term of the option. The fair value of restricted stock and restricted stock unit grants is determined using the closing trading price of the Company's common stock on the date of grant. The fair value of awards containing market conditions is determined using a Monte Carlo simulation model based upon the nature of the conditions, the expected volatility of the underlying security, and other relevant factors.

During the three months ended March 31, 2021, the Company granted 61,370 restricted common stock units (RSUs) with a grant date fair value of \$1.5 million and non-qualified stock options (NSOs) to purchase 199,324 shares of common stock with a grant date fair value of \$2.6 million to employees under the 2014 Employee, Director, and Consultant Equity Incentive Plan (the 2014 Equity Plan). The RSUs and NSOs granted to employees will vest over a three-year period.

Stock-based compensation is included in cost of revenue or operating expenses, as applicable, and consists of the following:

	Three Months Ended	
	March 31,	
	2021	2020
	(In thousands)	
Cost of product revenue	\$ 112	\$ 319
Research and development expenses	189	146
Sales and marketing expenses	168	171
General and administrative expenses	507	356
Total stock-based compensation	<u>\$ 976</u>	<u>\$ 992</u>

Pursuant to the "evergreen" provisions of the 2014 Equity Plan, the number of shares of common stock authorized for issuance under the plan automatically increased by 556,433 shares to 8,531,413 shares effective January 1, 2021.

As of March 31, 2021, 4,130,907 shares of common stock were reserved for issuance upon the exercise or vesting of outstanding stock-based awards granted under the 2014 Equity Plan. In addition, as of March 31, 2021, 80,658 shares of common stock were reserved for issuance upon the exercise of outstanding stock options granted under the Company's 2001 Equity Incentive Plan, as amended (the 2001 Equity Plan). Any cancellations or forfeitures of the options outstanding under the 2001 Equity Plan will result in the shares reserved for issuance upon exercise of such options becoming available for grant under the 2014 Equity Plan. As of March 31, 2021, the Company has either reserved in connection with statutory tax withholdings or issued a total of 3,123,562 shares under the 2014 Equity Plan. As of March 31, 2021, there were 1,196,286 shares of common stock available for future grant under the 2014 Equity Plan.

Net Loss per Share

The Company calculates net loss per share of common stock based on the weighted-average number of shares of common stock outstanding during each period. Potential common stock equivalents are determined using the treasury stock method. The weighted-average number of shares of common stock included in the computation of diluted net loss gives effect to all potentially dilutive common equivalent shares, including outstanding stock options and RSUs. Common equivalent shares are excluded from the computation of diluted net loss per share if their effect is antidilutive.

Segments

Operating segments are identified as components of an enterprise about which separate, discrete financial information is available for evaluation by the chief operating decision maker in making decisions on how to allocate resources and assess performance. The Company's chief operating decision maker is the Chief Executive Officer. The Company's chief operating decision maker reviews consolidated operating results to make decisions about allocating resources and assessing performance for the entire Company. The Company presently views its operations and manages its business as one operating segment.

Information about the Company's total revenues, based on shipment destination or services location, is presented in the following table:

	Three Months Ended	
	March 31,	
	2021	2020
	(In thousands)	
Revenue:		
U.S.	\$ 12,755	\$ 13,673
International	15,342	14,746
Total	<u>\$ 28,097</u>	<u>\$ 28,419</u>

Warranty

The Company provides warranties for its products and records the estimated cost within cost of revenue in the period that the related revenue is recorded. The Company's standard warranty period extends to one year from the date of shipment. This standard warranty provides that the Company's products will be free from defects in material and workmanship, and will, under normal use, conform to the specifications for the product.

The Company's products may be utilized in systems that involve new technical demands and new configurations. Accordingly, the Company regularly reviews and assesses whether warranty reserves should be recorded in the period the related revenue is recorded.

The Company did not record any warranty expense during the three months ended March 31, 2021 and 2020.

Recently Issued Accounting Standards

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (FASB) or other standard setting bodies. Recently issued standards typically do not require adoption until a future effective date. Prior to their effective date, the Company evaluates the pronouncements to determine the potential effects of adoption to its consolidated financial statements.

Standards Implemented Since December 31, 2020

The Company has not implemented any accounting standards that had a material impact on its consolidated financial statements during the three months ended March 31, 2021.

Standards to be Implemented

The Company believes that the impact of recently issued accounting standards that are not yet effective will not have a material impact on its consolidated financial statements.

(3) Revenue from Contracts with Customers

Revenue Recognition

Revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements within the scope of ASC 606, the Company performs the following five steps: (i) identification of the contract with a customer; (ii) identification of the performance obligations in the contract; (iii) determination of the transaction price; (iv) allocation of the transaction price to the separate performance obligations in the contract; and (v) recognition of the revenue associated with performance obligations as they are satisfied. The Company applies the five-step model to contracts when it is probable that the Company will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, the Company assesses the goods or services promised within each contract and determines those that are performance obligations, and assesses whether each promised good or service is

distinct. If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price based on the estimated relative standalone-selling prices of the promised products or services underlying each performance obligation. The Company determines standalone-selling prices based on the price at which the performance obligation is sold separately. If the standalone-selling price is not observable through past transactions, the Company estimates the standalone-selling price taking into account available information such as market conditions and internally approved pricing guidelines related to the performance obligations. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

When determining the transaction price of a contract, an adjustment is made if payment from a customer occurs either significantly before or significantly after performance, resulting in a significant financing component. Applying the practical expedient in paragraph ASC 606-10-32-18, the Company does not assess whether a significant financing component exists if the period between when the Company performs its obligations under the contract and when the customer pays is one year or less. The Company did not have any contracts outstanding at December 31, 2020 and did not enter into any contracts during the three months ended March 31, 2021 that contained a significant financing component.

The Company records deferred revenue for product sales when (i) the Company has delivered products but other revenue recognition criteria have not been satisfied or (ii) payments have been received in advance of the completion of required performance obligations.

Shipping and Handling Costs

Shipping and handling costs associated with outbound freight after control over a product has transferred to a customer are accounted for as fulfillment costs and are included in the cost of product revenue. The associated amount of revenue recognized includes the consideration to which the Company expects to be entitled to receive in exchange for incurring these shipping and handling costs.

Product Revenue

The Company generally enters into contracts containing one type of performance obligation. The Company recognizes product revenue when the performance obligation is satisfied, which is generally upon delivery according to contractual shipping terms within customer purchase orders.

The Company also enters into rebate agreements with certain customers. These agreements may be considered an additional performance obligation of the Company or variable consideration within a contract. Rebates are recorded as a reduction of revenue in the period the related product revenue is recognized. A corresponding liability is recorded as a component of deferred revenue on the consolidated balance sheets. These arrangements are primarily based on the customer attaining contractually specified sales volumes.

The Company estimates the amount of its product sales that may be returned by its customers and records this estimate as a reduction of revenue in the period the related product revenue is recognized. The Company currently estimates product return liabilities using historical rates of return, current quarter credit sales, and specific items of exposure on a contract-by-contract basis. Sales return reserves were approximately \$0.1 million at both March 31, 2021 and December 31, 2020.

Subsea Projects

The Company manufactures and sells subsea products that are designed for pipe-in-pipe applications in subsea oil production and are typically customized to meet customer specifications. Subsea products typically have no alternative use and contain an enforceable right to payment. Customer invoicing terms for subsea products are typically based on certain milestones within the production and delivery schedule. Under the provisions of ASC 606, the Company recognizes revenue at a point in time when transfer of control of the products is passed to the customer, or over time utilizing the input method. The timing of revenue recognition is assessed on a contract-by-contract basis. During the three months ended March 31, 2021 and 2020, the Company recognized revenue of \$0.4 million and \$2.2 million, respectively, in connection with subsea projects.

Research Services

The Company performs research services under contracts with various government agencies and other institutions. These contracts generally have one type of performance obligation associated with the provision of research services including certain licenses to any resulting intellectual property. The Company records revenue using the percentage-of-completion method in two ways: (1) for firm-fixed-price contracts, the Company accrues that portion of the total contract price that is allocable on the basis of the Company's estimates of costs incurred to date to total contract costs; and (2) for cost-plus-fixed-fee contracts, the Company records revenue that is equal to total payroll cost incurred times a stated factor plus reimbursable expenses, to a stated upper limit. The primary cost under the Company's research service contracts is the labor effort expended in completing the research. Typically, the only deliverable, other than the labor hours expended, is reporting research results to the customer or delivery of research grade aerogel products. Because the input measure of labor hours expended is also reflective of the output measure, it is a reliable means to measure the extent of progress toward completion. Revisions in cost estimates and fees during the course of the contract are reflected in the accounting period in which the facts that require the revisions become known. Contract costs and rates used to allocate overhead to contracts are subject to audit by the respective contracting government agency. Adjustments to revenue as a result of audit are recorded within the period they become known. To date, adjustments to revenue as a result of contracting agency audits have been insignificant.

Disaggregation of Revenue

In the following tables, revenue is disaggregated by primary geographical region and source of revenue:

	Three Months Ended March 31,					
	2021			2020		
	U.S.	International	Total	U.S.	International	Total
	(In thousands)					
Geographical region						
Asia	\$ —	\$ 5,588	\$ 5,588	\$ —	\$ 10,104	\$ 10,104
Canada	—	964	964	—	455	455
Europe	—	7,246	7,246	—	3,137	3,137
Latin America	—	1,544	1,544	—	1,050	1,050
U.S.	12,755	—	12,755	13,673	—	13,673
Total revenue	<u>\$ 12,755</u>	<u>\$ 15,342</u>	<u>\$ 28,097</u>	<u>\$ 13,673</u>	<u>\$ 14,746</u>	<u>\$ 28,419</u>
Source of revenue						
Product revenue	\$ 12,714	\$ 14,935	\$ 27,649	\$ 12,453	\$ 13,633	\$ 26,086
Subsea projects	—	407	407	1,108	1,113	2,221
Research services	41	—	41	112	—	112
Total revenue	<u>\$ 12,755</u>	<u>\$ 15,342</u>	<u>\$ 28,097</u>	<u>\$ 13,673</u>	<u>\$ 14,746</u>	<u>\$ 28,419</u>

Contract Balances

The following table presents changes in the Company's contract assets and contract liabilities during the three months ended March 31, 2021:

	Balance at December 31, 2020	Additions	Deductions	Balance at March 31, 2021
(In thousands)				
Contract assets				
Subsea projects	\$ 1,370	\$ 720	\$ (1,045)	\$ 1,045
Research services	67	41	(83)	25
Total contract assets	<u>\$ 1,437</u>	<u>\$ 761</u>	<u>\$ (1,128)</u>	<u>\$ 1,070</u>
Contract liabilities				
Deferred revenue				
Product revenue	\$ 1,859	\$ 2,030	\$ (2,319)	\$ 1,570
Subsea projects	178	491	(178)	491
Prepayment liability	9,555	7	—	9,562
Total contract liabilities	<u>\$ 11,592</u>	<u>\$ 2,528</u>	<u>\$ (2,497)</u>	<u>\$ 11,623</u>

During the three months ended March 31, 2021, the Company recognized \$1.5 million of revenue that was included in deferred revenue at December 31, 2020.

A contract asset is recorded when the Company satisfies a performance obligation by transferring a promised good or service and has earned the right to consideration from its customer. These assets may represent a conditional or unconditional right to consideration and are included within accounts receivable on the consolidated balance sheets.

A contract liability is recorded when consideration is received, or such consideration is unconditionally due, from a customer prior to transferring goods or services under the terms of the contract. Contract liabilities are recognized as revenue after control of the products or services is transferred to the customer and all revenue recognition criteria have been met.

(4) Inventories

Inventories consist of the following:

	March 31, 2021	December 31, 2020
(In thousands)		
Raw materials	\$ 4,090	\$ 4,068
Finished goods	6,757	9,031
Total	<u>\$ 10,847</u>	<u>\$ 13,099</u>

(5) Property, Plant and Equipment, Net

Property, plant and equipment consist of the following:

	March 31, 2021	December 31, 2020	Useful life
	(In thousands)		
Construction in progress	\$ 1,784	\$ 1,906	—
Buildings	24,016	24,016	30 years
Machinery and equipment	126,284	124,807	3-10 years
Computer equipment and software	8,885	8,850	3 years
Total	160,969	159,579	
Accumulated depreciation	(115,222)	(112,840)	
Property, plant and equipment, net	\$ 45,747	\$ 46,739	

Depreciation expense was \$2.6 million for the three months ended March 31, 2021 and 2020.

Construction in progress totaled \$1.8 million and \$1.9 million at March 31, 2021 and December 31, 2020, respectively, associated with the Company's East Providence, Rhode Island facility.

(6) Accrued Expenses

Accrued expenses consist of the following:

	March 31, 2021	December 31, 2020
	(In thousands)	
Employee compensation	\$ 3,817	\$ 2,587
Other accrued expenses	1,489	1,297
Total	\$ 5,306	\$ 3,884

(7) Revolving Line of Credit

The Company is party to an Amended and Restated Loan and Security Agreement with Silicon Valley Bank (Loan Agreement). On March 12, 2021, the Loan Agreement was amended and restated to extend the maturity date of the revolving credit facility to April 28, 2022 and to establish certain minimum Adjusted EBITDA levels and minimum Adjusted Quick Ratio covenants, as defined.

Under the revolving credit facility, the Company is permitted to borrow a maximum of \$20.0 million, subject to continued covenant compliance and borrowing base requirements. The interest rate applicable to borrowings under the revolving credit facility is based on prime rate, subject to a minimum rate of 4.00% per annum. Prime rate-based rates vary from prime rate plus 0.75% per annum to prime rate plus 2.00% per annum. In addition, the Company is required to pay a monthly unused revolving line facility fee of 0.50% per annum of the average unused portion of the revolving credit facility.

Under the Loan Agreement, the Company is required to comply with both non-financial and financial covenants, including a minimum Adjusted EBITDA covenant and a minimum Adjusted Quick Ratio covenant, as defined. At March 31, 2021, the Company was in compliance with all such covenants. Obligations under the Loan Agreement are secured by a security interest in all assets of the Company, including those at the East Providence facility, except for certain exclusions. The Company intends to extend or replace the facility prior to its maturity.

At March 31, 2021 and December 31, 2020, the Company had no amounts drawn from the revolving credit facility.

The Company has provided letters of credit to secure obligations under certain commercial contracts and other obligations. The Company had outstanding letters of credit backed by the revolving credit facility of \$1.5 million and \$1.4 million at March 31, 2021 and December 31, 2020, respectively, which reduce the funds otherwise available to the Company under the facility.

At March 31, 2021, the amount available to the Company under the revolving credit facility was \$13.1 million after giving effect to the \$1.5 million of outstanding letters of credit.

(8) Debt

On May 1, 2020, Aspen Aerogels Rhode Island, LLC (Borrower) executed a promissory note (Note) in favor of Northeast Bank to receive an unsecured loan in the principal amount of \$3.7 million (the PPP Loan) pursuant to the Paycheck Protection Program (PPP) established by the CARES Act, as amended by the Paycheck Protection Program Flexibility Act (Flexibility Act), and administered by the SBA. The Borrower conferred with representatives of the SBA prior to finalizing the PPP Loan. The PPP Loan was subsequently sold by Northeast Bank to The Loan Source, Inc. (PPP Investor), a secondary market investor.

The PPP Loan carries an interest rate of 1% per year and matures two years from the date of the Note. The PPP Loan indebtedness may be forgiven in whole or in part upon application by the Borrower to the PPP Investor. The PPP Investor will determine to what extent the PPP Loan is eligible for forgiveness, subject to SBA guidelines and other regulations, based on the use of loan proceeds for payroll costs, payment of interest on covered mortgage obligations, rent and utility costs over either an eight-week or 24-week period, at the Borrower's option, following the Borrower's receipt of the loan proceeds. Upon the Borrower's application for forgiveness, the SBA will review the Borrower's eligibility, use of proceeds and other certifications in connection with the application for the PPP Loan. Upon such review, the SBA may approve or deny the Borrower's loan forgiveness application, in whole or part. As of March 31, 2021, the Borrower had not applied for forgiveness.

If the Borrower has not applied for forgiveness within ten months from the end of the 24-week period following receipt of the loan proceeds, the Borrower will be required make payments of principal and accrued interest in equal monthly installments over the remaining term of the loan. In addition, the Flexibility Act permits the Borrower and the PPP Investor to mutually agree to extend the term of the PPP Loan to five years from the date of the Note. The Borrower may repay the PPP Loan at any time without penalty.

While the Borrower is not required to apply for forgiveness of the PPP Loan, upon application for forgiveness, the Borrower may not receive forgiveness of the PPP Loan in whole or in part. In addition, the amount of potential loan forgiveness may be reduced if the Borrower failed to maintain employee and salary levels during the applicable eight-week or 24-week period following receipt of the loan proceeds. If the Borrower applies for forgiveness, and the PPP Loan is not forgiven in whole or in part, the Borrower will be required to make payments of principal and accrued interest in equal monthly installments over the remaining term of the loan for the post-forgiveness balance outstanding.

The Note contains customary events of default relating to, among other things, payment defaults, breaches of representations and warranties, and defaults under any loan or agreement with another debtor, including the Company's credit facility with SVB, to the extent the PPP Investor believes such default may materially affect the Borrower's ability to repay the PPP Loan. The occurrence of an event of default, if not cured, may result in the Borrower's repayment of the PPP Loan prior to maturity.

The Borrower has used the proceeds of the PPP Loan to support ongoing operations and to sustain staffing levels in its East Providence, Rhode Island manufacturing facility despite the unfavorable impact of the COVID-19 pandemic and volatile energy markets on its business.

Long-term debt consists of the following:

	March 31, 2021	December 31, 2020
	(In thousands)	
Long-term debt, principal	\$ 3,686	\$ 3,686
Current portion of long-term debt	(2,854)	(1,609)
Debt issuance costs, net of accumulated amortization	(15)	(18)
Long-term debt	<u>\$ 817</u>	<u>\$ 2,059</u>

The schedule of required principal payments remaining on long-term debt outstanding as of March 31, 2021 is as follows:

Year	Principal Payments (In thousands)
2021 (excluding the three months ended March 31, 2021)	1,609
2022	2,077
Total principal payments	<u>\$ 3,686</u>

(9) Commitments and Contingencies

Cloud Computing Agreement

The Company is party to a cloud computing agreement that is a service contract for enterprise resource planning software. The agreement has a three-year term beginning on January 15, 2021. During the three months ended March 31, 2021, the Company capitalized less than \$0.1 million of costs related to implementation of the agreement that will begin to amortize during 2022. The capitalized implementation costs are included within other long-term assets on the consolidated balance sheets.

Thermal Barrier Contract

The Company is party to a contract with a major U.S. automotive original equipment manufacturer (OEM) to supply fabricated, multi-part thermal barriers (Barriers) for use in the battery system of its next-generation electric vehicles (Contract). Pursuant to the Contract, the Company is obligated to supply Barriers at fixed annual prices and at volumes to be specified by the OEM up to a daily maximum quantity through the term of the agreement, which expires on September 1, 2026. While the OEM has agreed to purchase its requirement for Barriers at locations to be designated from time to time from the Company, it has no obligation to purchase any minimum quantity of Barriers under the Contract. In addition, the OEM may terminate the Contract any time and for any or no reason. All other terms of the Contract are generally consistent with the OEM's standard purchase terms, including customary quality and warranty provisions.

BASF Supply Agreement

The Company is party to a supply agreement, as amended, with BASF Polyurethanes GmbH (BASF) (the Supply Agreement) and a joint development agreement with BASF SE (the JDA). Pursuant to the Supply Agreement, the Company will sell exclusively to BASF certain of the Company's products at annual volumes to be specified by BASF, subject to certain volume limits. However, BASF has no obligation to purchase products under the Supply Agreement. The Supply Agreement will terminate on December 31, 2027 with respect to the Company's Spaceloft A2 product and December 31, 2028 with respect to a new product developed under the JDA. Upon the expiration of the Supply Agreement with respect to each product, the Company will be subject to a post-termination supply commitment for an additional two years. The JDA is designed to facilitate collaboration by the parties on the development and commercialization of new products.

In addition, BASF, in its sole discretion, may make prepayments to the Company in the aggregate amount of up to \$22.0 million during the term of the Supply Agreement. These prepayment obligations are secured by a security interest in real estate, plant and equipment at the Company's Rhode Island facility and a license to certain intellectual property. BASF made a prepayment in the amount of \$5.0 million to the Company in 2018 (the 2018 Prepayment). As of January 1, 2019, 25.3% of any amounts that the Company invoices for Spaceloft A2 sold to BASF are credited against the outstanding balance of the 2018 prepayment. If any of the 2018 Prepayment remains uncredited as of December 31, 2021, BASF may require that the Company repay the uncredited amount to BASF beginning in 2022.

Pursuant to the first addendum to the Supply Agreement, on January 30, 2019, BASF made an additional prepayment in the amount of \$5.0 million to the Company (the 2019 Prepayment). As of January 1, 2020, 50.0% of any amounts that the Company invoices for the newly developed product sold to BASF are credited against the outstanding balance of the 2019 Prepayment. After December 31, 2022, BASF may require that the Company credit an additional 24.7% of any amounts invoiced by the Company for Spaceloft A2 product sold to BASF against the outstanding balance of the 2019 Prepayment, if any, or may require that the Company repay the uncredited amount of the 2019 Prepayment to BASF in full.

As of March 31, 2021, the Company had received \$10.0 million in prepayments from BASF and applied approximately \$0.2 million of credits against amounts invoiced.

The prepayment liability consists of the following:

	March 31, 2021	December 31, 2020
	(In thousands)	
Prepayment liability	\$ 9,832	\$ 9,845
Current portion of prepayment liability	(4,562)	—
Prepayment liability included within deferred revenue	(270)	(290)
Prepayment liability, long-term	<u>\$ 5,000</u>	<u>\$ 9,555</u>

The amounts and terms of additional prepayment installments, if any, are subject to negotiation between the Company and BASF.

Federal, State and Local Environmental Regulations

The Company is subject to federal, state and local laws and regulations relating to the environment. These laws generally provide for control of pollutants released into the environment and require responsible parties to undertake remediation. Penalties may be imposed for noncompliance.

Litigation

The Company is, from time to time, a party to litigation that arises in the normal course of its business operations. See Part II, Item 1 “Legal Proceedings” of this Quarterly Report on Form 10-Q for a description of certain of the Company’s current legal proceedings. The Company is not presently a party to any litigation for which it believes a loss is probable requiring an amount to be accrued or a possible loss contingency requiring disclosure.

(10) Leases

The Company leases office and warehouse space in Northborough, Massachusetts and East Providence, Rhode Island under operating leases. Under these agreements, the Company is obligated to pay annual rent, real estate taxes, and certain other operating expenses. The Company also leases equipment under operating leases. The Company’s operating leases expire at various dates through 2026.

The Company determines if an arrangement is a lease at inception. ROU assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s payment obligations under the lease. Operating lease ROU assets and liabilities are recognized based on the present value of lease payments over the lease term. To measure its lease liabilities, the Company uses its incremental borrowing rate or the rate implicit in the lease, if available. The Company calculates its incremental borrowing rate using a synthetic credit rating analysis based on Moody’s Building Materials Industry Rating Methodology. ROU assets also include any direct costs and prepaid lease payments but exclude any lease incentives received. The Company’s lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

The Company elected the short-term lease recognition exemption for all leases that qualify. For leases that qualify for this exemption, the Company does not recognize ROU assets or lease liabilities. For lease agreements with lease and non-lease components, the Company accounts for each component separately. However, in the case of equipment leases, the Company accounts for lease and non-lease components as a single component.

Maturities of operating lease liabilities at March 31, 2021 are as follows:

Year	Operating Leases (In thousands)
2021 (excluding the three months ended March 31, 2021)	1,121
2022	1,440
2023	1,389
2024	885
2025	723
Thereafter	584
Total lease payments	6,142
Less imputed interest	(913)
Total lease liabilities	\$ 5,229

The Company incurred operating lease costs of \$0.4 million and \$0.3 million during the three months ended March 31, 2021 and 2020, respectively. Cash payments related to operating lease liabilities were \$0.4 million during both the three months ended March 31, 2021 and 2020.

At March 31, 2021, the weighted average remaining lease term for operating leases was 4.6 years. At March 31, 2021, the weighted average discount rate for operating leases was 7.3%.

As of March 31, 2021, the Company has additional operating equipment leases that will commence during 2021 with total lease payments of \$0.2 million and a weighted average lease term of 4.0 years.

(11) CARES Act Payroll Tax Deferral

The Company elected to defer approximately \$0.9 million of its employer payroll tax obligation for the period from March 27, 2020 to December 31, 2020 pursuant to the provisions of the CARES Act. The Company is required to remit 50 percent of the deferred tax balance on or before December 31, 2021 and the remaining 50 percent on or before December 31, 2022.

Other long-term liabilities consist of the following:

	March 31, 2021	December 31, 2020
	(In thousands)	
Deferred employer payroll tax obligation	\$ 870	\$ 870
Current portion of deferred payroll tax obligation	(436)	(436)
Other long-term liabilities	\$ 434	\$ 434

(12) Net Loss Per Share

The computation of basic and diluted net loss per share consists of the following:

	Three Months Ended March 31,	
	2021	2020
(In thousands, except share and per share data)		
Numerator:		
Net loss	\$ (6,250)	\$ (3,169)
Denominator:		
Weighted average shares outstanding, basic and diluted	27,983,470	25,194,292
Net loss per share, basic and diluted	\$ (0.22)	\$ (0.13)

Potentially dilutive common shares that were excluded from the computation of diluted net loss per share because they were anti-dilutive consist of the following:

	Three Months Ended March 31,	
	2021	2020
Common stock options	3,846,738	4,143,821
Restricted common stock units	364,828	720,969
Restricted common stock awards	45,066	128,453
Total	4,256,632	4,993,243

In the table above, anti-dilutive shares consist of those common stock equivalents that have (i) an exercise price above the average stock price for the period or (ii) related average unrecognized stock compensation expense sufficient to buy back the entire amount of shares. The Company excludes the shares issued in connection with restricted stock awards from the calculation of basic weighted average common shares outstanding until the restrictions lapse.

(13) Income Taxes

The Company incurred net operating losses and recorded a full valuation allowance against net deferred tax assets for all periods presented. Accordingly, the Company has not recorded a provision for federal or state income taxes.

(14) Subsequent Events

The Company has evaluated subsequent events through May 4, 2021, the date of issuance of the consolidated financial statements for the three months ended March 31, 2021

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

The following information should be read in conjunction with the unaudited financial information and the notes thereto included in this Quarterly Report on Form 10-Q and the audited financial information and the notes thereto included in the Annual Report on Form 10-K for the year ended December 31, 2020, filed with the U.S. Securities and Exchange Commission (SEC) on March 12, 2021, which we refer to as the Annual Report.

Certain matters discussed in this Quarterly Report on Form 10-Q may be deemed to be forward-looking statements that involve risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. In this Quarterly Report on Form 10-Q, words such as “may,” “will,” “anticipate,” “estimate,” “expects,” “projects,” “intends,” “plans,” “believes” and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements.

Our actual results and the timing of certain events may differ materially from the results discussed, projected, anticipated, or indicated in any forward-looking statements. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from the forward-looking statements contained in this Quarterly Report on Form 10-Q. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this Quarterly Report on Form 10-Q, they may not be predictive of results or developments in future periods.

The following information and any forward-looking statements should be considered in light of factors discussed elsewhere in this Quarterly Report on Form 10-Q and under “Risk Factors” in Item 1A of the Annual Report.

We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they are made. We disclaim any obligation, except as specifically required by law and the rules of the SEC, to publicly update or revise any such statements to reflect any change in our expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

You should read the following discussion and analysis of financial condition and results of operations together with Part I Item 1 “Financial Statements,” which includes our financial statements and related notes, elsewhere in this Quarterly Report on Form 10-Q.

Investors and others should note that we routinely use the Investors section of our website to announce material information to investors and the marketplace. While not all of the information that we post on the Investors section of our website is of a material nature, some information could be deemed to be material. Accordingly, we encourage investors, the media, and others interested in us to review the information that we share on the Investors section of our website, <https://www.aerogel.com>.

Overview

We design, develop and manufacture innovative, high-performance aerogel insulation used primarily in the energy infrastructure and building materials markets. We believe our aerogel blankets deliver the best thermal performance of any widely used insulation product available on the market today and provide a combination of performance attributes unmatched by traditional insulation materials. Our end-use customers select our products where thermal performance is critical and to save money, improve resource efficiency, enhance sustainability, preserve operating assets and protect workers.

Our insulation is used by oil producers and the owners and operators of refineries, petrochemical plants, liquefied natural gas facilities, power generating assets and other energy infrastructure. Our Pyrogel and Cryogel product lines have undergone rigorous technical validation by industry leading end-users and achieved significant market adoption.

We are also actively developing a number of promising aerogel products and technologies for the electric vehicle market. We have developed and are commercializing our proprietary line of PyroThin thermal barriers for use in lithium-ion batteries in electric vehicles. Our PyroThin product is an ultra-thin, lightweight and flexible thermal barrier designed to impede the propagation of thermal runaway across multiple lithium-ion battery system architectures. Our thermal barrier technology is designed to offer a unique combination of performance attributes that enable electric vehicle manufacturers to achieve critical safety goals without sacrificing driving range. In addition, we are seeking to leverage our patented carbon aerogel technology to develop industry-leading battery materials for lithium-ion battery systems. These battery materials have the potential to enable an increase in the drive range of electric vehicles.

The commercial potential for our PyroThin thermal barriers and our carbon aerogel battery materials in the electric vehicle market is significant. Accordingly, we are planning to hire additional personnel, incur additional operating expenses, and incur capital expenditures to expand manufacturing capacity, build an automated thermal barrier fabrication operation, enhance research and development resources and construct a battery materials facility, among other items.

We also derive product revenue from a number of other end markets, including the building materials market. Customers in these markets use our products for applications as diverse as wall systems, military and commercial aircraft, trains, buses, appliances, apparel, footwear and outdoor gear. As we continue to enhance our aerogel technology platform, we believe we will have additional opportunities to address high-value applications in the global insulation market, the electric vehicle market and in a number of new, high-value markets.

We generate product revenue through the sale of our line of aerogel blankets and thermal barriers. We market and sell our products primarily through a sales force based in North America, Europe and Asia. The efforts of our sales force are supported by a small number of sales consultants with extensive knowledge of a particular market or region. Our sales force is responsible for establishing and maintaining customer and partner relationships, delivering highly technical information and ensuring high-quality customer service.

Our salespeople work directly with end-use customers and engineering firms to promote the qualification, specification and acceptance of our products. We also rely on an existing and well-established channel of qualified insulation distributors and contractors in more than 50 countries around the world to ensure rapid delivery of our products and strong end-user support.

We also perform research services under contracts with various agencies of the U.S. government, including the Department of Defense and the Department of Energy, and other institutions. We have decided to cease efforts to secure additional funded research contracts and to wind down our existing contract research activities. This decision reflected our desire to focus our research and development resources on initiatives to improve the profitability of our existing business and on efforts to develop new products and next-generation technology with application in new, potentially high-value markets.

We manufacture our products using our proprietary technology at our facility in East Providence, Rhode Island. We have operated the East Providence facility since 2008 and have increased our annual capacity in phases through December 31, 2020 to 55 million square feet of aerogel blankets. We are currently engaged in an initiative, which we refer to as EP20, designed to increase the capacity of the East Providence facility to 60 million square feet of aerogel blankets by the end of 2021. In addition, we anticipate that we will need to construct a state-of-the-art thermal barrier fabrication operation, hire dedicated thermal barrier fabrication employees, and increase our aerogel blanket manufacturing capacity to keep pace with the significant potential demand for our PyroThin thermal barriers. Accordingly, we are in the early stages of planning a significant expansion of our aerogel capacity prior to the end of 2023. The expected elements of the completed expansion plan will include the size of the required capacity expansion, the selection of an optimal manufacturing site for the expansion, the appropriate financing structure to fund the project and a detailed timeline for the construction and operation of the facility.

During 2020, we entered into a contract with a major U.S. automotive original equipment manufacturer to supply fabricated, multi-part thermal barriers for use in the battery system of its next-generation electric vehicles. Pursuant to the contract, we are obligated to supply the barriers at fixed annual prices and at volumes to be specified by the customer up to a daily maximum quantity through the term of the agreement, which expires on September 1, 2026. While the customer has agreed to purchase from us its requirement for the barriers at locations to be designated from time to time, it has no obligation to purchase any minimum quantity of barriers under the contract. In addition, the customer may terminate the contract any time and for any or no reason. All other terms of the contract are generally consistent with the customer's standard purchase terms, including customary quality and warranty provisions.

We are engaged in a strategic partnership with BASF to develop and commercialize products for the building materials and other markets. The strategic partnership includes a supply agreement governing the exclusive sale of specified products to BASF and a joint development agreement targeting innovative products and technologies. BASF has no obligation to purchase any products under the supply agreement. Pursuant to the supply agreement, BASF may, in its sole discretion, make prepayments to us in the aggregate amount of up to \$22.0 million during the term of the agreement. We may repay the prepayments to BASF at any time in whole or in part for any reason.

BASF made a prepayment to us of \$5.0 million during 2018. As of January 1, 2019, 25.3% of any amounts that we invoice for Spaceloft A2 sold to BASF will be credited against the outstanding balance of the 2018 prepayment. If any amount of the 2018 prepayment remains uncredited at December 31, 2021, BASF may require that we repay the uncredited amount following a six-week notice period. In January 2019, BASF made an additional prepayment to us of \$5.0 million. As of January 1, 2020, 50% of any amounts that we invoice for a newly developed product sold to BASF will be credited against the outstanding balance of the 2019

prepayment. After December 31, 2022, BASF may require that we credit 24.7% of any amounts we invoice for Spaceloft A2 sold to BASF against the outstanding balance of the 2019 prepayment or may require that we repay the uncredited amount following a six-week notice period.

On March 12, 2021, we entered into an Amended and Restated Loan and Security Agreement (Loan Agreement) with Silicon Valley Bank to extend the maturity date of the revolving credit facility to April 28, 2022. Pursuant to the Loan Agreement, we are permitted to borrow a maximum of \$20.0 million, subject to continued covenant compliance and borrowing base requirements. The interest rate applicable to borrowings under the revolving credit facility is based on the prime rate, subject to a minimum rate of 4.00% per annum. Prime rate-based rates vary from prime rate plus 0.75% per annum to prime rate plus 2.00% per annum. In addition, we are required to pay a monthly unused revolving line facility fee of 0.50% per annum of the average unused portion of the revolving credit facility. The credit facility has also been amended to establish certain minimum Adjusted EBITDA and minimum Adjusted Quick Ratio covenants, as defined.

On May 1, 2020, our wholly owned subsidiary, Aspen Aerogels Rhode Island, LLC (Borrower), executed a note for an unsecured loan of \$3.7 million pursuant to the Paycheck Protection Program (PPP Loan) under the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), as amended, and administered by the U.S. Small Business Administration (SBA). The Borrower conferred with representatives of the SBA prior to finalizing the PPP Loan. The loan is unsecured, contains customary events of default, carries an interest rate of 1% per year, and matures on May 1, 2022. The Borrower may repay the loan at any time without penalty. In addition, the Borrower is permitted at any time to submit an application to extend the maturity of loan to May 1, 2025.

The Borrower may also choose to apply to have the PPP Loan forgiven in whole or in part subject to SBA guidelines. The potential amount of forgiveness is based on the Borrower's use of loan proceeds for payroll costs, mortgage interest payments, rent and utility costs over either an eight-week or 24-week period following receipt of the loan proceeds. The SBA may disapprove of the loan forgiveness application if the agency determines that the Borrower was ineligible for the PPP Loan. As of March 31, 2021, the Borrower had not applied for forgiveness.

Upon application, the Borrower may receive loan forgiveness in whole or in part. In addition, the amount of potential loan forgiveness will be reduced if the Borrower failed to maintain employee and salary levels during the applicable eight-week or 24-week period following receipt of the loan proceeds. If the Borrower applies for forgiveness, and the PPP Loan is not forgiven in whole or in part, the Borrower will be required to begin to make payments of the principal and accrued interest of the post-forgiveness balance outstanding in equal monthly installments over the remaining term of the loan. If the Borrower does not apply for forgiveness by August 19, 2021, the Borrower will be required to make payments of principal and accrued interest in equal monthly installments over the remaining term of the loan.

The Borrower used the proceeds of the PPP Loan to support ongoing operations and to sustain staffing levels in the East Providence, Rhode Island manufacturing facility despite the unfavorable impact the COVID-19 pandemic and volatile energy markets had on its business.

On February 3, 2021, we entered into a supply agreement (Supply Agreement) with Silbond Corporation (Silbond), for the purchase of certain silanes (Product). Pursuant to the Supply Agreement, we agreed to purchase and Silbond agreed to supply, all of our requirements for the Product through the term of the Supply Agreement, which term ends on September 30, 2023, unless either party terminates the agreement early pursuant to the terms of the Supply Agreement.

Our revenue for the three months ended March 31, 2021 was \$28.1 million, which represented a decrease of \$0.3 million, or 1%, from \$28.4 million for the three months ended March 31, 2020. Net loss for the three months ended March 31, 2021 was \$6.3 million and net loss per share was \$0.22. Net loss for the three months ended March 31, 2020 was \$3.2 million and net loss per share was \$0.13.

At present, we are not certain of the extent of the impact that the COVID-19 pandemic will continue to have on our business. Our manufacturing facility remains operational and we have not encountered any significant disruption to our supply chain or our ability to deliver to our customers. However, the demand for our products has been negatively impacted, particularly due to access restrictions on contractors in energy infrastructure facilities, resulting in a year-over-year decreases in our total revenue and increases in our net loss.

In response to the COVID-19 pandemic, we have implemented and are following safe practices recommended by public health authorities and other government entities. We continue to focus on the safety and health of our employees, customers and vendors. In addition, we have implemented various precautionary measures, including remote work arrangements, restricted business travel and procedures for social distancing, face coverings and safe hygiene. We continue to monitor public health guidance as it evolves and

plan to adapt our practices as appropriate. Refer to “Risk Factors” in Item 1A of the Annual Report for more information concerning risks to our business associated with COVID-19.

Key Metrics and Non-GAAP Financial Measures

We regularly review a number of metrics, including the following key metrics, to evaluate our business, measure our performance, identify trends affecting our business, formulate financial projections and make strategic decisions.

Square Foot Operating Metric

We price our product and measure our product shipments in square feet. We estimate our annual capacity was 55 million square feet of aerogel blankets at March 31, 2021. We believe the square foot operating metric allows us and our investors to measure our manufacturing capacity and product shipments on a uniform and consistent basis. The following chart sets forth product shipments in square feet associated with recognized revenue, including revenue recognized over time utilizing the input method, for the periods presented:

	Three Months Ended March 31,	
	2021	2020
Product shipments in square feet	(In thousands) 8,644	8,165

Adjusted EBITDA

We use Adjusted EBITDA, a non-GAAP financial measure, as a means to assess our operating performance. We define Adjusted EBITDA as net income (loss) before interest expense, taxes, depreciation, amortization, stock-based compensation expense and other items, from time to time, which we do not believe are indicative of our core operating performance. Adjusted EBITDA is a supplemental measure of our performance that is not presented in accordance with U.S. GAAP. Adjusted EBITDA should not be considered as an alternative to net income (loss) or any other measure of financial performance calculated and presented in accordance with U.S. GAAP. In addition, our definition and presentation of Adjusted EBITDA may not be comparable to similarly titled measures presented by other companies.

We use Adjusted EBITDA:

- as a measure of operating performance because it does not include the impact of items that we do not consider indicative of our core operating performance;
- for planning purposes, including the preparation of our annual operating budget;
- to allocate resources to enhance the financial performance of our business; and
- as a performance measure used under our bonus plan.

We also believe that the presentation of Adjusted EBITDA provides useful information to investors with respect to our results of operations and in assessing the performance and value of our business. Various measures of EBITDA are widely used by investors to measure a company’s operating performance without regard to items that can vary substantially from company to company depending upon financing and accounting methods, book values of assets, capital structures and the methods by which assets were acquired.

Although measures similar to Adjusted EBITDA are frequently used by investors and securities analysts in their evaluation of companies, we understand that Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for net income (loss), income (loss) from operations, net cash provided by (used in) operating activities or an analysis of our results of operations as reported under U.S. GAAP. Some of these limitations are:

- Adjusted EBITDA does not reflect our historical cash expenditures or future requirements for capital expenditures or other contractual commitments;
- Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not reflect stock-based compensation expense;
- Adjusted EBITDA does not reflect our income tax expense or cash requirements to pay our income taxes;

- Adjusted EBITDA does not reflect our interest expense, or the cash requirements necessary to service interest or principal payments on our debt;
- although depreciation, amortization and impairment charges are non-cash charges, the assets being depreciated, amortized or impaired will often have to be replaced in the future, and Adjusted EBITDA does not reflect any cash requirements for these replacements; and
- other companies in our industry may calculate EBITDA or Adjusted EBITDA differently than we do, limiting their usefulness as a comparative measure.

Because of these limitations, our Adjusted EBITDA should not be considered as a measure of discretionary cash available to us to reinvest in the growth of our business or as a measure of cash available for us to meet our obligations.

To properly and prudently evaluate our business, we encourage you to review the U.S. GAAP financial statements included elsewhere in this Quarterly Report on Form 10-Q, and not to rely on any single financial measure to evaluate our business.

The following table presents a reconciliation of net loss, the most directly comparable U.S. GAAP measure, to Adjusted EBITDA for the periods presented:

	Three Months Ended	
	March 31,	
	2021	2020
	(In thousands)	
Net loss	\$ (6,250)	\$ (3,169)
Depreciation and amortization	2,638	2,563
Stock-based compensation ⁽¹⁾	976	992
Interest expense	75	83
Adjusted EBITDA	<u>\$ (2,561)</u>	<u>\$ 469</u>

- (1) Represents non-cash stock-based compensation related to vesting and modifications of stock option grants, vesting of restricted stock units and vesting of restricted common stock.

Our financial performance, including such measures as net income (loss), earnings per share and Adjusted EBITDA, are affected by a number of factors including volume and mix of aerogel products sold, average selling prices, our material costs and manufacturing expenses, the costs associated with capacity expansions and start-up of additional production capacity, and the amount and timing of operating expenses. Accordingly, we expect that our net income (loss), earnings per share and Adjusted EBITDA will vary from period to period.

During 2021, we are projecting modest growth in total revenue principally due to an anticipated increase in project-based demand in the LNG market and maintenance-based demand in North American petrochemical and refinery market. We have also announced a price increase to offset an increase in raw material costs during 2021 that will also contribute to revenue growth.

However, we intend to increase our investment in the electric vehicle market and our aerogel technology platform in 2021. We will use this investment to accelerate thermal barrier business development, to establish industry-leading thermal barrier fabrication capability, to progress from the development phase to the commercialization phase of our silicon-rich carbon aerogel battery materials, and to identify additional high-value markets for our aerogel technology, among other items. As a result, we expect to experience a decrease in Adjusted EBITDA and an increase in net loss versus 2020.

Components of Our Results of Operations

Revenue

We recognize product revenue from the sale of our line of aerogel products and research services revenue from the provision of services under contracts with various agencies of the U.S. government and other institutions. Product and research services revenue is recognized upon the satisfaction of contractual performance obligations.

We record deferred revenue for product sales when (i) we have delivered products but other revenue recognition criteria have not been satisfied or (ii) payments have been received in advance of the completion of required performance obligations.

During 2021, we are projecting modest growth in total revenue principally due to an anticipated increase in project-based demand in the LNG market and maintenance-based demand in North American petrochemical and refinery market. We have also announced a price increase to offset an increase in raw material costs during 2021 that will also contribute to revenue growth.

Cost of Revenue

Cost of product revenue consists primarily of materials and manufacturing expense. Cost of product revenue is recorded when the related product revenue is recognized.

Material is our most significant component of cost of product revenue and includes fibrous batting, silica materials and additives. Material costs as a percentage of product revenue vary from product to product due to differences in average selling prices, material requirements, product thicknesses and manufacturing yields. In addition, we provide warranties for our products and record the estimated cost within cost of revenue in the period that the related revenue is recorded or when we become aware that a potential warranty claim is probable and can be reasonably estimated. As a result of these factors, material costs as a percentage of product revenue will vary from period to period due to changes in the mix of aerogel products sold, the costs of our raw materials or the estimated cost of warranties. We expect that material costs will decrease in absolute dollars and as a percentage of revenue during 2021 due to the impact of our 2021 price increase, a projected favorable product mix and the impact of our bill of material cost initiatives.

Manufacturing expense is also a significant component of cost of revenue. Manufacturing expense includes labor, utilities, maintenance expense, and depreciation on manufacturing assets. Manufacturing expense also includes stock-based compensation for manufacturing employees and shipping costs. We expect that manufacturing expense will increase in absolute dollars and as a percentage of revenue during 2021 principally due to our plan to hire additional personnel and incur additional manufacturing expenses to establish fabrication operations in support of projected growth in PyroThin thermal barrier demand.

In total, we expect that cost of product revenue will increase in absolute dollars during 2021 versus 2020, but may increase or decrease modestly as a percentage of revenue versus 2020 depending on the level of revenue achieved during 2021.

Cost of research services revenue consists of direct labor costs of research personnel engaged in the contract research, third-party consulting and subcontractor expense, and associated direct material costs. This cost of revenue also includes overhead expenses associated with project resources, development tools and supplies. Cost of research services revenue is recorded when the related research services revenue is recognized. In 2021, we expect cost of research services revenue will decline as we wind down our existing contract research activities.

Gross Profit

Our gross profit as a percentage of revenue is affected by a number of factors, including the volume of aerogel products produced and sold, the mix of aerogel products sold, average selling prices, our material and manufacturing costs, realized capacity utilization and the costs associated with expansions and start-up of production capacity. Accordingly, we expect our gross profit in absolute dollars and as a percentage of revenue to vary significantly from period to period.

During 2021, we project that gross profit will grow in absolute dollars versus 2020 due to projected growth in total revenue and a decrease in projected material costs, offset, in part, by an increase in manufacturing expense. However, we expect that gross profit as a percentage of revenue may increase or decrease modestly versus 2020 depending on the level of revenue achieved during 2021.

Operating Expenses

Operating expenses consist of research and development, sales and marketing, and general and administrative expenses. Operating expenses include personnel costs, legal fees, professional fees, service fees, insurance premiums, travel expense, facilities related costs and other costs, expenses and fees. The largest component of our operating expenses is personnel costs, consisting of salaries, benefits, incentive compensation and stock-based compensation. In any particular period, the timing and extent of personnel additions or reductions, legal activities, including patent enforcement actions, marketing programs, research efforts and a range of similar activities or actions could materially affect our operating expenses, both in absolute dollars and as a percentage of revenue.

During 2021, we expect to hire additional personnel and incur additional operating expenses to support the anticipated multi-year growth in our PyroThin thermal barrier business. As a result, we expect that operating expenses will increase in both absolute dollars and as a percentage of revenue during the year. In the longer term, we expect that operating expenses will increase in absolute dollars, but decrease as a percentage of revenue.

Research and Development Expenses

Research and development expenses consist primarily of expenses for personnel engaged in the development of next-generation aerogel compositions, form factors and manufacturing technologies. These expenses also include testing services, prototype expenses, consulting services, trial formulations for new products, equipment depreciation, facilities costs and related overhead. We expense research and development costs as incurred. We expect to continue to devote substantial resources to the development of new aerogel technologies, including our carbon aerogel battery materials. We believe that these investments are necessary to maintain and improve our competitive position. We also expect to continue to invest in research and engineering personnel and the infrastructure required in support of their efforts.

While we expect our research and development expenses will increase in absolute dollars but decrease as a percentage of revenue in the longer term, in 2021 we expect such expenses will increase in both absolute dollars and as a percentage of revenue.

Sales and Marketing Expenses

Sales and marketing expenses consist primarily of personnel costs, incentive compensation, marketing programs, travel and related costs, consulting expenses and facilities related costs.

We expect that sales and marketing expenses will increase in absolute dollars during 2021 principally due to an increase in compensation associated with the addition of personnel in support of our PyroThin thermal barrier business. In the longer term, we expect that sales and marketing expenses will increase in absolute dollars, but decrease as a percentage of revenue.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel costs, legal expenses, consulting and professional services, audit and tax consulting costs, and expenses for our executive, finance, legal, human resources and information technology organizations. General and administrative expenses have increased as we have incurred additional costs related to operating as a publicly-traded company, which include costs of compliance with securities, corporate governance and related laws and regulations, investor relations expenses, increased insurance premiums, including director and officer insurance, and increased audit and legal fees.

We expect our general and administrative expenses to increase as we add general and administrative personnel to support the anticipated growth of our business. We also expect that the patent enforcement actions, described in more detail under “Legal Proceedings” in Part II, Item 1 of this Quarterly Report on Form 10-Q, if protracted, could result in significant legal expense over the medium to long-term. While we expect that our general and administrative expenses will increase in absolute dollars but decrease as a percentage of revenue in the longer term, in 2021 we expect such expenses will increase in both absolute dollars and as a percentage of revenue.

Interest Expense, Net

Interest expense, net consists primarily of fees and interest expense related to our revolving credit facility.

Provision for Income Taxes

We have incurred net losses since inception and have not recorded benefit provisions for U.S. federal income taxes or state income taxes since the tax benefits of our net losses have been offset by valuation allowances due to the uncertainty associated with the utilization of net operating loss carryforwards.

Results of Operations

Three months ended March 31, 2021 compared to the three months ended March 31, 2020

The following tables set forth a comparison of the components of our results of operations for the periods presented:

Revenue

	Three Months Ended March 31,				Change	
	2021		2020		Amount	Percentage
	Amount	Percentage of Revenue	Amount	Percentage of Revenue		
(\$ in thousands)						
Revenue:						
Product	\$ 28,056	100%	\$ 28,307	100%	\$ (251)	(1)%
Research services	41	0%	112	0%	(71)	(63)%
Total revenue	<u>\$ 28,097</u>	100%	<u>\$ 28,419</u>	100%	<u>\$ (322)</u>	(1)%

The following chart sets forth product shipments in square feet associated with recognized revenue, including revenue recognized over time utilizing the input method, for the periods presented:

	Three Months Ended March 31,		Change	
	2021	2020	Amount	Percentage
Product shipments in square feet (in thousands)	8,644	8,165	479	6%

Total revenue decreased \$0.3 million, or 1%, to \$28.1 million for the three months ended March 31, 2021 from \$28.4 million in the comparable period in 2020. The decrease in total revenue was the result of decreases in both product revenue and research services revenue.

Product revenue decreased by \$0.2 million, or 1%, to \$28.1 million for the three months ended March 31, 2021 from \$28.3 million in the comparable period in 2020. This decrease was principally the result of decreases in project-based demand in the subsea market and maintenance-based demand in the global petrochemical and refinery markets, offset, in part, by an increase in project-based demand in the LNG market.

Product revenue for the three months ended March 31, 2021 included \$7.4 million to a North American distributor, \$5.0 million to a European LNG project contractor, and \$4.0 million to an Asian LNG project contractor. Product revenue for the three months ended March 31, 2020 included \$7.0 million to a North American distributor and \$4.6 million to an Asian LNG project contractor.

The average selling price per square foot of our products decreased by \$0.22, or 6%, to \$3.25 per square foot for the three months ended March 31, 2021 from \$3.47 per square foot for the three months ended March 31, 2020. The decrease in average selling price principally reflected the impact of the increase in the proportion of project-based product revenue in the Asian and European LNG markets and a change in the mix of products sold. This decrease in average selling price had the effect of decreasing product revenue by \$1.9 million for the three months ended March 31, 2021 from the comparable period in 2020.

In volume terms, product shipments increased by 0.4 million square feet, or 6%, to 8.6 million square feet of aerogel products for the three months ended March 31, 2021, as compared to 8.2 million square feet for the three months ended March 31, 2020. The increase in product volume had the effect of increasing product revenue by \$1.7 million for the three months ended March 31, 2021 from the comparable period in 2020.

Research services revenue decreased \$0.1 million, or 63%, to less than \$0.1 million for the three months ended March 31, 2021 from \$0.1 million in the comparable period in 2020. The decrease was primarily due to our decision to wind down our contract research activities to focus our research and development resources on improving our existing business profitability and developing new products and next-generation technology with application in new, potentially high-value markets.

Product revenue was greater than 99% of total revenue for the both three months ended March 31, 2021 and 2020. Research services revenue was less than 1% of total revenue for the both the three months ended March 31, 2021 and 2020.

Cost of Revenue

	Three Months Ended March 31,						Change	
	2021		2020					
	Amount	Percentage of Related Revenue	Percentage of Total Revenue	Amount	Percentage of Related Revenue	Percentage of Total Revenue	Amount	Percentage
	(\$ in thousands)							
Cost of revenue:								
Product	\$ 24,129	86%	86%	\$ 22,399	79%	79%	\$ 1,730	8%
Research services	12	29%	0%	40	36%	0%	(28)	(70)%
Total cost of revenue	<u>\$ 24,141</u>	86%	86%	<u>\$ 22,439</u>	79%	79%	<u>\$ 1,702</u>	8%

Total cost of revenue increased \$1.7 million, or 8%, to \$24.1 million for the three months ended March 31, 2021 from \$22.4 million in the comparable period in 2020. The increase in total cost of revenue was the result of an increase in product cost of revenue partially offset by a decrease in research services cost of revenue.

Product cost of revenue increased by \$1.7 million, or 8%, to \$24.1 million for the three months ended March 31, 2021 from \$22.4 million in the comparable period in 2020. The \$1.7 million increase was the result of a \$1.8 million increase in material costs and a \$0.1 million decrease in manufacturing expense. The increase in material costs was the result of the impact of the high proportion of fixed manufacturing expenses in our East Providence manufacturing despite a decrease in manufacturing output during the quarter and the 0.4 million square feet, or 6%, increase in total product shipments. The decrease in manufacturing expense was the result of a decrease in plant operating costs of \$0.1 million and compensation and related costs of \$0.1 million, offset, in part, by an increase in maintenance expenses of \$0.1 million.

Product cost of revenue as a percentage of product revenue increased to 86% during the three months ended March 31, 2021 from 79% during the three months ended March 31, 2020. This increase was the result of the increase in material costs as a percentage of revenue during the three months ended March 31, 2021.

Research services cost of revenue decreased by 70%, to less than \$0.1 million for the three months ended March 31, 2021 from the comparable period in 2020. Cost of research service revenue as a percentage of research services revenue decreased to 29% during the three months ended March 31, 2021 from 36% in the comparable period in 2020 due to our decision to wind down our research activities.

Gross Profit

	Three Months Ended March 31,				Change	
	2021		2020			
	Amount	Percentage of Revenue	Amount	Percentage of Revenue	Amount	Percentage
	(\$ in thousands)					
Gross profit	\$ 3,956	14%	\$ 5,980	21%	\$ (2,024)	(34)%

Gross profit decreased \$2.0 million, or 34%, to \$4.0 million for the three months ended March 31, 2021 from \$6.0 million in the comparable period in 2020. The decrease in gross profit was the result of the \$0.3 million decrease in total revenue and the \$1.7 million increase in total cost of revenue. This decrease in revenue was principally the result of decreases in project-based demand in the subsea market and maintenance-based demand in the global petrochemical and refinery markets, offset, in part, by an increase in project-based demand in the LNG market. The increase in total cost of revenue was the result of the impact of the high proportion of fixed manufacturing expenses in our East Providence manufacturing despite a decrease in manufacturing output and the 0.4 million square feet, or 6%, increase in total product shipments during 2021.

Gross profit as a percentage of total revenue decreased to 14% of total revenue for the three months ended March 31, 2021 from 21% in the comparable period in 2020.

Interest expense, net, consists primarily of fees and interest expense associated with our revolving credit agreement and was less than \$0.1 million for both the three months ended March 31, 2021 and 2020.

Liquidity and Capital Resources

Overview

We have experienced significant losses and invested substantial resources since our inception to develop, commercialize and protect our aerogel technology and to build a manufacturing infrastructure capable of supplying aerogel products at the volumes and costs required by our customers. These investments have included research and development and other operating expenses, capital expenditures and investment in working capital balances.

Through 2015, we experienced revenue growth and gained share in our target markets. Despite a decline in revenue in 2016, 2017 and 2018, our financial projections anticipated long-term revenue growth, increasing levels of gross profit and improved cash flow from operations. To support this growth, we initiated a plan in 2018 to increase the capacity of our East Providence, Rhode Island manufacturing facility to approximately 60 million square feet of aerogel blankets and currently expect to achieve this goal by the end of 2021. We may incur additional capital expenditures to complete this plan in 2021.

We are also increasing our investment in the research and development of next-generation aerogel products and technologies. During 2021, we will continue to develop aerogel products and technologies for the electric vehicle market. We believe the commercial potential for our technology in the electric vehicle market is significant. Accordingly, we are planning to hire additional personnel, incur additional operating expenses, build an automated thermal barrier fabrication operation, and construct a carbon aerogel battery materials facility, among other items.

In addition, we anticipate that we will need to increase our silica aerogel blanket manufacturing capacity to keep pace with the significant potential demand for our PyroThin thermal barriers. Accordingly, we are in the early stages of planning a significant expansion of our aerogel capacity prior to the end of 2023. The expected elements of the completed expansion plan will include the size of the required capacity expansion, the selection of an optimal manufacturing site for the expansion, the appropriate financing structure to fund the project and a detailed timeline for the construction and operation of the facility. We expect that we will incur significant increase in capital expenditures to build out the additional capacity and in operating expenses associated with the start-up of the facility.

We took several actions during 2020 to increase the financial resources available to support current operating requirements and capital expenditures. In February 2020, we completed an underwritten public offering of our common stock and received net proceeds of \$14.8 million. In March 2020, we extended the maturity of our revolving credit facility with Silicon Valley Bank to April 28, 2021. In May 2020, our wholly owned subsidiary, Aspen Aerogels Rhode Island, LLC, received PPP Loan proceeds of \$3.7 million under the CARES Act. During November and December 2020, we also completed the sale of 714,357 shares of our common stock at an average price of \$13.96 per share through our at-the-market (ATM) offering program with B. Riley Securities, Inc. (B. Riley Securities) as our sales agent and received net proceeds of \$9.5 million after deducting commissions \$0.3 million and offering expenses of approximately \$0.2 million. During the three months ended March 31, 2021, we sold an additional 305,182 shares of our common stock at an average price of \$21.05 through the ATM offering program and received net proceeds of \$6.2 million.

We believe that our existing cash balance and funds available under our revolving credit facility will be sufficient to support current operating requirements and research and development activities. However, we believe that our cash balance and funds available under the revolving credit facility will not be sufficient to fund the capital expenditures required to establish an automated thermal barrier fabrication operation, enhance research and development lab facilities and equipment, build a carbon aerogel battery materials facility, and to construct a new silica aerogel blanket manufacturing facility.

As a result, we plan to supplement our cash balance with equity financings, debt financings, customer prepayments, or technology licensing fees to provide the capital necessary to fund operating requirements, to complete future capacity expansions or to support evolving strategic business initiatives. We also intend to extend or replace our revolving credit facility with Silicon Valley Bank prior to its maturity.

Primary Sources of Liquidity

Our principal sources of liquidity are currently our cash and cash equivalents and our revolving credit facility with Silicon Valley Bank. Cash and cash equivalents consist primarily of cash and money market accounts on deposit with banks. As of March 31, 2021, we had \$17.2 million of cash and cash equivalents.

On February 18, 2020, we completed an underwritten public offering of 1,955,000 shares of our common stock at an offering price of \$8.25 per share. We received net proceeds of \$14.8 million after deducting underwriting discounts and commissions of \$1.1 million and offering expenses of approximately \$0.3 million.

On November 5, 2020, we entered into a sales agreement for the ATM offering program under which we may sell up to \$33,871,250 of our common stock through B. Riley Securities as our sales agent. We are not obligated to sell any stock under the sales agreement. We will pay B. Riley Securities a commission of 3.0% of the gross sales proceeds of shares sold under the agreement. During 2020, we sold 714,357 shares of our common stock through the ATM offering program and received net proceeds of \$9.5 million. During the three months ended March 31, 2021, we sold an additional 305,182 shares of our common stock through the ATM offering program and received net proceeds of \$6.2 million.

On May 1, 2020, our wholly-owned subsidiary, Aspen Aerogels Rhode Island, LLC (Borrower) executed a note for a loan of \$3.7 million pursuant to the PPP under the CARES Act, as amended, and administered by the SBA. The loan is unsecured, contains customary events of default, carries an interest rate of 1% per year, and matures on May 1, 2022. The Borrower may repay the loan in full at any time without penalty. In addition, the Borrower may apply to have the maturity of loan to May 1, 2025.

The Borrower may apply to have the PPP Loan indebtedness forgiven in whole or in part subject to SBA guidelines and based on the use of loan proceeds for payroll costs, mortgage interest payments, rent and utility costs over either an eight-week or 24-week period, at the Borrower's option, following its receipt of the loan proceeds. The SBA may disapprove of the Borrower's loan forgiveness application if the agency determines that the Borrower was ineligible for the PPP Loan. As of March 31, 2021, the Borrower had not applied for forgiveness.

If the Borrower applies for, but does not receive forgiveness of the PPP Loan in whole or in part, the Borrower will be required to make payments of the remaining principal and accrued interest in equal monthly installments over the remaining term of the loan. If the Borrower does not apply for forgiveness by August 19, 2021, the Borrower will be required to make payments of principal and accrued interest in equal monthly installments over the remaining term of the loan.

We have maintained our revolving credit facility, as amended from time to time, with Silicon Valley Bank since March 2011. On March 12, 2021, we amended and restated our revolving credit facility with Silicon Valley Bank to extend the maturity date of the revolving credit facility to April 28, 2022 and to establish certain minimum Adjusted EBITDA levels with respect to the minimum Adjusted EBITDA and minimum Adjusted Quick Ratio covenants, as defined. We intend to extend or replace the facility prior to its maturity.

Under our revolving credit facility, we may borrow a maximum of \$20.0 million, subject to continued covenant compliance and borrowing base requirements. The interest rate applicable to borrowings under the revolving credit facility is based on prime rate, as defined, subject to a minimum rate of 4.00% per annum. Prime rate-based rates vary from prime rate plus 0.75% per annum to prime rate plus 2.00% per annum. In addition, we are required to pay a monthly unused revolving line facility fee of 0.50% per annum of the average unused portion of the revolving credit facility.

At March 31, 2021, we had no outstanding borrowings under our revolving credit facility with Silicon Valley Bank, \$1.5 million of outstanding letters of credit secured by the revolving credit facility, \$3.7 million outstanding on the PPP Loan, and an obligation of \$9.8 million associated with prepayments received pursuant to our supply agreement with BASF.

Under the revolving credit facility, we are required to comply with both non-financial and financial covenants, including minimum Adjusted EBITDA and Adjusted Quick Ratio covenants, as defined in the loan agreement. At March 31, 2021, we were in compliance with all such covenants.

The amount available to us under the facility at March 31, 2021 was \$13.1 million after giving effect to the \$1.5 million of letters of credit outstanding.

Analysis of Cash Flow

Net Cash Used in Operating Activities

During the three months ended March 31, 2021, we used \$1.9 million in net cash in operating activities, as compared to the use of \$1.4 million in net cash during the comparable period in 2020, an increase in the use of cash of \$0.5 million. This increase in use of cash was the result of an increase in net loss adjusted for non-cash items of \$3.1 million, offset, in part, by a decrease in net cash used by changes in operating assets and liabilities of \$2.6 million.

Net Cash Used in Investing Activities

Net cash used in investing activities is primarily related to capital expenditures to support our growth. Net cash used in investing activities for the three months ended March 31, 2021 and 2020 was \$1.5 million and \$0.9 million, respectively, in capital expenditures primarily for machinery and equipment to improve the capacity, throughput, efficiency and reliability of our East Providence facility.

Net Cash Provided by Financing Activities

Net cash provided by financing activities for the three months ended March 31, 2021 totaled \$4.1 million and consisted of \$6.2 million in net proceeds from our ATM offering program and \$0.5 million in proceeds from employee stock option exercises, offset, in part, by \$2.6 million in cash used for payments made for employee tax withholdings associated with the vesting of restricted stock units.

Net cash provided by financing activities for the three months ended March 31, 2020 totaled \$10.4 million and consisted of \$19.4 million in borrowings under our line of credit and \$14.8 million in net proceeds from an underwritten public offering of our common stock, offset, in part, by \$22.6 million of repayments under our line of credit and \$1.2 million in cash used for payments made for employee tax withholdings associated with the vesting of restricted stock units.

Off Balance Sheet Arrangements

Since inception, we have not engaged in any off balance sheet activities as defined in Item 303(a)(4) of Regulation S-K.

Contractual Obligations and Commitments

There have been no material changes to our contractual obligations and commitments as reported in our Annual Report.

Recent Accounting Pronouncements

Information regarding new accounting pronouncements is included in note 2 to our unaudited consolidated financial statements contained in Item 1 of this Quarterly Report on Form 10-Q.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with U.S. GAAP. The preparation of our financial statements and related disclosures requires us to make estimates, assumptions and judgments that affect the reported amount of assets, liabilities, revenue, costs and expenses and related disclosures. We believe that the estimates, assumptions and judgments involved in these accounting policies have the greatest potential impact on our financial statements and, therefore, we consider these to be our critical accounting policies. Accordingly, we evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions and conditions. See our Annual Report and note 2 to our consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for information about these critical accounting policies, as well as a description of our other significant accounting policies.

Certain Factors That May Affect Future Results of Operations

The SEC encourages companies to disclose forward-looking information so that investors can better understand a company's future prospects and make informed investment decisions. This Quarterly Report on Form 10-Q contains such "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks, uncertainties and other important factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about: our beliefs in the appropriateness of our assumptions, the accuracy of our estimates regarding expenses, loss contingencies, future revenues, future profits, uses of cash, available credit, PPP Loan Proceeds, capital requirements, and the need for additional financing to operate our business, including to complete the planned capacity expansion of our East Providence manufacturing facility, and to fund our planned strategic business initiatives; the performance of our aerogel blankets; our expectation that we will be successful in obtaining, enforcing and defending our patents against competitors and that such patents are valid and enforceable; our belief that our products possess strong competitive advantages

over traditional insulation materials, including the superior thermal performance and the thin, easy-to-use and durable blanket form of our products; our plans to expand capacity in our East Providence, Rhode Island manufacturing facility; our estimates of annual production capacity; our expectation to achieve our EP20 goals by the end of 2021; beliefs about the role of our technology and products in the electric vehicle market; beliefs about the commercial potential for our technology in the electric vehicle market; beliefs about our ability to produce and deliver products to electric vehicle customers; beliefs about Aspen's contract with the major U.S. automotive manufacturer; beliefs about the potential for the major U.S. automotive manufacturer to become a significant customer for Aspen's products; beliefs about revenue, costs, expenses, profitability, investments or cash flow associated with the contract with the major U.S. automotive manufacturer, beliefs about the performance of our thermal barrier products in the battery systems of electric vehicles; beliefs about the potential the commercial opportunity for Aspen's thermal barrier products; our strategic partnership with BASF and the potential benefits of such a relationship, including the potential for it to create new product and market opportunities; our supply agreement with BASF, our supply to BASF of its Spaceloft A2 product and newly developed product, the potential for future cash advances from BASF under our supply agreement with BASF (payment of which are subject to certain conditions) to provide a source of financing and the potential for BASF to become a significant customer for our products; our joint development agreement with BASF, and the potential for it to support the development of new aerogel products and technologies; our beliefs about the usefulness of the square foot operating metric; our beliefs about the financial metrics that are indicative of our core performance; our beliefs about the usefulness of our presentation of Adjusted EBITDA; our expectations about the effect of manufacturing capacity on financial metrics such as Adjusted EBITDA; our expectations about future revenues, expenses, gross profit, net loss, loss per share and Adjusted EBITDA, sources and uses of cash, capital requirements and the sufficiency of our existing cash balance and available credit; our beliefs about the outcome, effects or estimated costs of current or potential litigation or their respective timing, including expected legal expense in connection with our patent enforcement actions; our plans to devote substantial resources to the development of new aerogel technology; our expectations about product mix; our expectations about future material costs and manufacturing expenses as a percentage of revenue; our expectations of future gross profit and the effect of manufacturing expenses, manufacturing capacity and productivity on gross profit; our expectations about our resources and other investments in new technology and related research and development activities and associated expenses; our expectations about short and long term (a) research and development (b) general and administrative and (c) sales and marketing expenses; our expectations of revenue growth, increased gross profit, and improving cash flows over the long term; our intentions about managing capital expenditures and working capital balances; our expectations about incurring significant capital expenditures in the future; our expectations about the expansion of our workforce and resources and its effect on sales and marketing, general and administrative, and related expenses; our expectations about future product revenue and demand for our products; our expectations about the effect of stock based compensation on various costs and expenses; our expectations about potential sources of future financing; our beliefs about the impact of accounting policies on our financial statements; our beliefs about the effect of interest rates, inflation and foreign currency fluctuations on our results of operations and financial condition; our beliefs about the expansion of our international operations; our statements about the impact of major public health concerns, including the COVID-19 pandemic or other pandemics arising globally, and the future, and currently unknown extent of, the impact of the COVID-19 pandemic on our business and operations; our statements about the sufficiency of our current and future actions to address the impact of the COVID-19 pandemic on our business and operations, including our future revenue, Adjusted EBITDA and other financial metrics; our belief that we qualify for partial or complete forgiveness of the PPP Loan; and changes by governmental authorities regarding the CARES Act or related administrative matters and the Company's and its subsidiary's abilities to comply with the terms of the PPP Loan and the CARES Act, including to use the proceeds of the PPP Loan as described herein.

Words such as "may," "will," "anticipate," "estimate," "expects," "projects," "intends," "plans," "believes" and words and terms of similar substance used in connection with any discussion of future operating or financial performance, identify forward-looking statements. All forward-looking statements are management's present expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those described in the forward-looking statements. These risks include, but are not limited to, those set forth in this Quarterly Report on Form 10-Q and under the heading "Risk Factors" contained in Item 1A of our Annual Report.

In light of these assumptions, risks and uncertainties, the results and events discussed in the forward-looking statements contained in this Quarterly Report on Form 10-Q might not occur. Stockholders and other readers are cautioned not to place undue reliance on the forward-looking statements, which speak only as of the date of this Quarterly Report on Form 10-Q. We are not under any obligation, and we expressly disclaim any obligation, to update or alter any forward-looking statements, whether as a result of new information, future events or otherwise. All subsequent forward-looking statements attributable to Aspen Aerogels, Inc. or to any person acting on its behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure results primarily from fluctuations in interest rates as well as from inflation. In the normal course

of business, we are exposed to market risks, including changes in interest rates which affect our line of credit under our revolving credit facility as well as cash flows. We may also face additional exchange rate risk in the future as we expand our business internationally.

Interest Rate Risk

We are exposed to changes in interest rates in the normal course of our business. At March 31, 2021, we had unrestricted cash and cash equivalents of \$17.2 million. These amounts were held for working capital and capital expansion purposes and were invested primarily in deposit and money market accounts at a major financial institution in North America. Due to the short-term nature of these investments, we believe that our exposure to changes in the fair value of our cash as a result of changes in interest rates is not material.

As of March 31, 2021, we had no borrowings outstanding on our revolving credit facility. At March 31, 2021, we had \$1.5 million of outstanding letters of credit supported by the revolving credit facility.

Under our revolving credit facility, we are permitted to borrow a maximum of \$20.0 million, subject to continued covenant compliance and borrowing base requirements. The interest rate applicable to borrowings under the revolving credit facility is based on the prime rate, subject to a minimum rate of 4.00% per annum. Prime rate-based rates vary from prime rate plus 0.75% per annum to prime rate plus 2.00% per annum. In addition, we are required to pay a monthly unused revolving line of credit facility fee of 0.5% per annum of the average unused portion of the revolving credit facility. The maturity date of our revolving credit facility is April 28, 2022. We intend to extend or replace the facility prior to its maturity.

At March 31, 2021, the amount available to us under the revolving credit facility was \$13.1 million after giving effect to the \$1.5 million of letters of credit outstanding under the facility.

Our PPP Loan has an interest rate of 1% per annum and matures on May 1, 2022. In accordance with the Flexibility Act, we may submit an application to extend the maturity of the loan by three years to May 1, 2025. At March 31, 2021, the PPP Loan had an outstanding balance of \$3.7 million.

Inflation Risk

Although we expect that our operating results will be influenced by general economic conditions, we do not believe that inflation has had a material effect on our results of operations during the periods presented in this report. However, our business may be affected by inflation in the future.

Foreign Currency Exchange Risk

We are subject to inherent risks attributed to operating in a global economy. Principally all of our revenue, receivables, purchases and debts are denominated in U.S. dollars.

Item 4. Controls and Procedures.

(a) Evaluation of Disclosure Controls and Procedures.

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Securities Exchange Act of 1934, as amended (the Exchange Act), is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

As of March 31, 2021, our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on such evaluation, our principal executive officer and principal financial officer have concluded that, as of March 31, 2021, our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and

reported within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. In addition, our principal executive officer and principal financial officer have concluded that the impact of the COVID-19 pandemic did not impact our ability to maintain our internal controls over financial reporting and disclosure controls and procedures.

(b) Changes in Internal Controls.

During the three months ended March 31, 2021, there were no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15(d)-15(f) promulgated under the Exchange Act, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings.

Patent Enforcement Actions

In May 2016, we filed a complaint for patent infringement against Nano Tech Co., Ltd. (Nano), and Guangdong Alison Hi Tech., Ltd. (Alison) in the International Trade Commission, or ITC. In February 2018, the ITC issued its final determination that Nano and Alison had infringed asserted Aspen patents and that they have not proven the patents are invalid except with respect to one dependent product claim, which the ITC found was not infringed. The ITC affirmed that Alison and Nano each violated Section 337 of the Tariff Act and issued a limited exclusion order prohibiting importation of infringing aerogel insulation products manufactured by Alison and Nano. Alison's appeal with respect to a product patent to the United States Court of Appeals for the Federal Circuit (CAFC) was rejected, and resulted in CAFC affirming the validity of our patent. The exclusion order, which is enforced by the United States Customs and Border Protection, is currently in effect.

Additionally, the USPTO denied Alison's requests to invalidate the claims of four of our patents in Inter-Partes Review. Alison also filed multiple similar requests with the Chinese Patent Office (SIPO), seeking to invalidate our Chinese manufacturing process patents and two of our Chinese product patents. With respect to one of those requests, not withdrawn previously by Alison, the Patent Review Board of SIPO (PRB), issued a decision upholding the validity of Aspen's issued patent as amended in the proceedings. Alison has appealed the PRB's decision to the Beijing IP court. On July 25, 2020, the Beijing IP court dismissed Alison's appeal and upheld the validity of Aspen's patent and we received this decision on September 15, 2020. Nano has also filed a request seeking invalidation of a product patent at SIPO. After the oral hearing at PRB, Nano withdrew its invalidation request. On September 23, 2019, Alison filed yet another request to invalidate the same patent, whose validity was previously confirmed by PRB. On January 23, 2020 PRB denied Alison's latest invalidation request.

In April 2016, we also filed a patent infringement suit at the District Court in Mannheim, Germany (Mannheim court), against Nano, Alison and two European resellers asserting their infringement of one of our German patents. We subsequently asserted infringement of another three patents against Nano, Alison and a European reseller of Alison's products at the Mannheim court. We have since settled with one European reseller in exchange for a commitment not to procure infringing products and cooperation with our case.

- In January 2018, the court issued a series of judgments by acknowledgement (German, "Anerkenntnisurteil") finding the second reseller, Hiltex, liable for infringement and also issued injunctions against Hiltex. The judgments resulted from a settlement agreement in which Hiltex agreed not to resell the infringing products in Europe where at least one of the asserted patents are active.
- On March 8, 2019, the Mannheim court issued two separate judgments in cases against Nano and Alison, respectively. The Mannheim court determined that both Nano and Alison are infringing on Aspen's EP1638750 (750 Patent) in connection with their respective products. The court also issued injunctions prohibiting the offer, putting on the market, using, importing or possessing the infringing products. The court found the defendants liable to us for damages since September 22, 2012. The court also ordered the defendants to provide information on the scope of the acts of infringement committed since August 22, 2012, and a recall of infringing products. The court ordered Nano and Alison to bear the costs of the legal proceedings and reimburse statutory attorneys' costs and expenses to us, that exact amount of which is yet to be determined. Nano and Alison have appealed the judgments of the Mannheim court. Nano subsequently withdrew the appeal while Alison's appeal is currently pending.
- The Mannheim court issued two decisions on December 23, 2019 finding that Alison infringed the 577 Patent and the 950 Patent and also issued injunctions prohibiting Alison from continuing infringement in connection with any aerogel sheets. The December 2019 decisions against Alison have now become final and binding.
- The Mannheim court issued two decisions on July 31, 2020 finding that Nano infringed each of the 577 Patent and the 950 Patent. In addition to granting other remedies, the court also issued injunctions prohibiting the offer, putting on the market, using, importing or possessing any aerogel sheets. After the passing of deadline to file appeals, these decisions have now become final.
- Nano and Alison also initiated nullity actions in German Federal Patent Court in Munich against our asserted German patents. On September 25, 2018, the Federal Patent Court in Munich dismissed the challenge to the validity of 750 Patent which has subsequently become final. Nano and Alison also filed an opposition to one of the asserted patents at the EPO. In December

2018, the opposition division of EPO determined the patent, EP2813338 (338 Patent), was invalid on formality grounds and decided to revoke it, which determination is currently under appeal at the EPO Board of appeals.

- On March 19 and 20, 2019 the German Federal Patent Court in Munich (FPC) conducted oral proceedings and voided four claims in EP2415577 (577 Patent) and confirmed the validity of challenged claims in EP2422950 (950 Patent) within the scope of silica gels. These FPC judgments are now final and binding on the parties. Nano had filed another nullity action seeking to invalidate the remaining claims in the 577 Patent which action Nano subsequently failed to pursue. On June 17, 2020, Nano also filed an opposition to a recently issued Aspen Patent EP3120983B1, titled “Continuous Sheet of Gel Materials and Continuous sheet of Aerogel”.
- On January 28, 2021, a search order was executed and relevant evidence secured at the principal places of business of AMA S.p.A. and AMA Composites S.r.l. (collectively, “AMA”) in San Martino in Rio and Campogalliano, respectively, based on an ex-parte search order issued by the Court of Genoa, Italy at our request in connection with alleged infringement of the Italian part of our patents previously asserted successfully against Nano and Alison in Germany. The Court of Genoa subsequently held a hearing and confirmed the validity of the search order and its execution. While the search proceedings do not take a position on the infringement issues, we may use any evidence collected during the search proceedings to prove infringement. As a result, on May 3, 2021, we filed an infringement complaint, a writ of summons, as known in Italy, at the Court of Genoa alleging that AMA has infringed the Italian part of three European patents (same patents asserted in the German litigation) and a patent on composition of aerogel based composites in connection with AMA’s resale of aerogel products supplied by Chinese companies and sale of any products derived therefrom. We are seeking monetary damages and preliminary injunction of AMA’s alleged infringing activities. We expect the Court of Genoa to assess our claims and AMA’s defense through appointment of an expert after the submission of relevant writs and evidence.

Additionally, a reseller of Nano’s products in Taiwan challenged the validity of one of our patents in Taiwan in 2018. After careful review of our written response, the Taiwanese patent office has determined the patent as valid and dismissed the challenge in December 2018. In 2018, LG Chem Ltd. challenged the validity of one of our patents in Korea at the IPTAB of the Korean Intellectual Property Office. After conducting an oral hearing, the IPTAB issued a decision on November 30, 2019 upholding claims related to aerogel sheets incorporating fibers. On January 14, 2021 the Korean Patent Court confirmed the validity of the claims related to aerogel sheets incorporating fibers.

Due to their nature, it is difficult to predict the outcome or the costs involved in any litigation or administrative proceedings, including any appeals process. Furthermore, the counter parties in these proceedings may have significant resources and interest to litigate and therefore, these litigation matters could be protracted and may ultimately involve significant legal expenses. In addition to the foregoing, we have been and may be from time to time a party to other legal proceedings that arise in the ordinary course of business and to other patent enforcement actions to assert our patent rights.

Item 1A. Risk Factors.

There have been no material changes to the risk factors included in our Annual Report.

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

(a) *Unregistered Sales of Equity Securities.* Not applicable.

(b) *Use of Proceeds from Initial Public Offering of Common Stock.* Not applicable.

(c) *Purchases of Equity Securities By the Issuer and Affiliated Purchasers.* We did not repurchase any of our equity securities during the quarter ended March 31, 2021.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

(a) Exhibits

- 10.1* [Supply Agreement, dated February 3, 2021, by and between the Company and Silbond Corporation.](#)
- 10.2 [Aspen Aerogels, Inc. Non-employee Director Compensation Policy, effective February 24, 2021.](#)
- 31.1 [Certification of principal executive officer under Section 302\(a\) of the Sarbanes-Oxley Act of 2002.](#)
- 31.2 [Certification of principal financial officer under Section 302\(a\) of the Sarbanes-Oxley Act of 2002.](#)
- 32 [Certifications of the principal executive officer and the principal financial officer under Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 101.INS XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
- 101.SCH Inline XBRL Taxonomy Extension Schema Document.
- 101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase Document.
- 101.DEF Inline XBRL Taxonomy Extension Definition Linkbase Document.
- 101.LAB Inline XBRL Taxonomy Extension Label Linkbase Document.
- 101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase Document.
- 104 Cover Page Interactive Data File (embedded within the Inline XBRL document).
- * Portions of this exhibit (indicated by asterisks) have been omitted in accordance with the rules of the Securities and Exchange Commission.

SIGNATURES

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

ASPEN AEROGELS, INC.

Date: May 4, 2021

By: /s/ Donald R. Young
Donald R. Young
President and Chief Executive Officer
(principal executive officer)

Date: May 4, 2021

By: /s/ John F. Fairbanks
John F. Fairbanks
Vice President, Chief Financial Officer and Treasurer
(principal financial officer and principal accounting officer)

SUPPLY AGREEMENT

This Supply Agreement (this "**Agreement**") effective as of the latest date in the signature block below ("**Effective Date**"), is entered into by and between Aspen Aerogels, Inc., a Delaware corporation with a place of business at 30 Forbes Road, Building B, Northborough, MA 01532 ("**Buyer**") and Silbond Corporation, a Michigan corporation with a place of business at 9901 Sand Creek Hwy, Weston, MI 49289 ("**Seller**", and together with Buyer, the "**Parties**", and each, a "**Party**").

BACKGROUND

Seller is in the business of manufacturing and selling various industrial chemicals including the Products.

Buyer is in the business of manufacturing and selling aerogel based insulation products that uses Products as raw materials.

Seller is currently supplying Products to Buyer on an individual order basis and without any long-term arrangement.

In consideration of the mutual covenants and agreements as set forth herein and for the good and valuable consideration, the receipt and sufficiency of which Parties hereby acknowledge, the Parties agree as follows:

1. DEFINITIONS

"**Affiliate**" of a Person means any other Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such Person. For the purposes of this Agreement, "controls", "controlled by" or "common control" mean the direct or indirect possession of more than fifty percent (50%) of the voting securities of, or income interest or comparable equity in, such Person.

"**Buyer**" has the meaning set out in the preamble of this Agreement.

"**Certificate of Analysis**" means a certificate issued by an authorized and knowledgeable Seller's Personnel that confirms the batch of Products to which the certificate accompanies complies with Specifications. This certificate shall include Buyer's Purchase Order number, Seller's product identification, Seller's lot number and date of manufacturing along with test results of the properties identified in the respective Specifications.

"**Change Order Request**" has the meaning as described in Section 3.4.

"**Confidential Information**" has the meaning as described in Section 7.1.

"**Delivery Location**" means the following: (a) for [***] the delivery location shall be [***] and (b) for [***] the delivery location shall be the [***]. To the extent [***] is supplied to Buyer from Seller's warehouse pursuant to Section 4.7, Delivery Location shall be [***].

"**Delivery Date**" means the date by which Seller is required to deliver to Buyer, any Products ordered and such orders accepted pursuant to this Agreement.

"**Disclosing Party**" has the meaning as described in Section 7.1.

[***] = **CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE THE INFORMATION (I) IS NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED.**

“Effective Date” means the date set out in the preamble to this Agreement.

“Force Majeure Event” has the meaning set forth in Section 12.10.

“Governmental Authority” means government of any country, (federal, state, provincial or local) or any agency or instrumentality of such government, or any self-regulated organization, or other non-governmental regulatory authority or quasi-governmental authority (to the extent that the rules, regulations, or orders of such organization or authority have the force of Law), or any arbitrator appointed by the Parties, court, or tribunal of competent jurisdiction.

“Intellectual Property Rights” means all industrial and other intellectual property rights comprising or relating to: (i) patents, patentable subject matter and other inventions, patentable or otherwise; (ii) trademarks; (iii) internet domain names, whether or not trademarks, registered by any authorized private registrar or Governmental Authority, web addresses, web pages, websites, and URLs; (iv) works of authorship, expressions, designs, and design registrations, whether or not copyrightable, including copyrights and copyrightable works, software and firmware, data, data files, and databases and other specifications and documentation; and (v) all industrial and other intellectual property rights, and all rights, interests, and protections that are associated with, equivalent or similar to, or required for the exercise of, any of the foregoing, however arising, in each case whether registered or unregistered and including all registrations and applications for, and renewals or extensions of, such rights or forms of protection pursuant to the Laws of any jurisdiction throughout in any part of the world.

“Law” means any statute, law, ordinance, regulation, rule, code, constitution, treaty, common law, Governmental order, or other requirement or rule of law of any Governmental Authority.

“Maximum Supply Obligation” shall have the meaning as set forth in Section 3.5.

“MT” means metric ton and equals to 1000 kg or 2,204.6 pounds.

“Nonconforming Products” means any Products delivered to Buyer by Seller that: (i) do not fully conform to the Specifications; or (ii) on visual inspection, Buyer reasonably determines are otherwise defective. Where the context requires, Nonconforming Products are deemed to be Products for the purposes of this Agreement.

“Notice” or **“Notify”** have the respective meaning as described in Section 12.4.

“Order Confirmation” has the meaning as described in Section 3.3.

“Person” means any individual, partnership, corporation, trust, limited liability entity, unincorporated organization, association, Governmental Authority, or any other entity.

“Personnel” means agents, employees, or subcontractors engaged or appointed by Seller or Buyer.

“Price(s)” has the meaning as described in Section 5.1.

“Price Reduction” means price reduction as each calendar year cumulative purchases reach the predefined purchase ranges as described in [Exhibit B](#). Any Purchase Orders issued after a volume range is reached shall have the applicable prices after adjusting for the respective price reduction as described in Exhibit B.

“**Product(s)**” means [***] conforming to the respective Specifications as set forth in Exhibit A or as otherwise mutually agreed in writing.

"**Purchase Order**" means Buyer's purchase order issued by Buyer to Seller hereunder, setting forth the volume and proposed Delivery Dates for Product, as further described in Section 3.2.

“**Rebate**” means the volume of Products purchased prior to reaching predefined purchase ranges multiplied by the associated Price Reduction, as described in Exhibit B.

“**Receiving Party**” has the meaning as described in Section 7.1.

"**Representatives**" means a Party's Affiliates, and each of their respective Personnel, officers, directors, partners, shareholders, attorneys, third-party advisors, successors, and permitted assigns.

“**RI Subsidiary**” means Buyer’s Affiliate, Aspen Aerogels Rhode Island, LLC, with an operational location at 3 Dexter Road, East Providence, Rhode Island.

"**Seller**" has the meaning set forth in the preamble of this Agreement.

"**Specifications**" means the technical specifications for the Products attached hereto in Exhibit A.

"**Term**" has the meaning set forth in Section 6.1.

2. AGREEMENT TO PURCHASE AND SELL PRODUCTS

2.1 Purchase and Sale. Subject to the terms and conditions of this Agreement, during the Term, Buyer shall purchase Products from Seller, and Seller shall sell (or procure replacement) Products to Buyer, at the Prices.

2.2 Purchase and Supply Obligation. Subject to the terms of this Agreement, Seller agrees to supply and Buyer agrees to purchase from Seller no less than 100% of Buyer’s requirements for Products (including that of RI Subsidiary’s), which is all of Buyer’s requirements for [***].

[***]

2.3 Buyer’s Election Concerning Tariffs. If one or more punitive tariffs imposed by the United States during [***] origin are reduced or no longer applicable, on or after [***] Buyer may request no more than [***] during the Term of this Agreement from Seller to provide a new competitive price for Products. Seller shall provide the requested price proposal within [***] of the request. Buyer, at its sole discretion, may (option 1) accept Seller’s new price proposal which shall go into effect after [***], or (option 2) purchase up to [***] of Buyer’s future requirements for each year for Products from third party suppliers with supply originating from [***], whereby Buyer shall Notify Seller within [***] of the receipt of the new proposal from Seller. If Buyer exercises option 2, such reduction of up to [***] of Buyer’s purchase requirements and Seller’s supply obligation as set forth in Section 2.2 shall only take effect [***] after Buyer’s decision, however Buyer’s purchase requirements shall not be less than [***] each year. Any such change to Buyer’s purchase requirements pursuant to this Section 2.3 shall be set forth in a written amendment of this Agreement. The following are examples for purposes of clarification only:

[***] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE THE INFORMATION (I) IS NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED.

Example 1: [***].

Example 2: [***].

Notwithstanding the foregoing, in the event that Buyer exercises the foregoing option to reduce the purchase requirements, and thereafter Buyer requests an amendment of the Agreement to increase Buyer's purchase requirements and Seller's supply requirements, Seller has no obligation to supply such volumes to Buyer unless agreed to by written amendment.

3. FORECASTS, ORDERING PROCEDURES

3.1 Forecast. Throughout the Term, no later than the [***], Buyer shall provide Seller with a [***] forecast of the volume of Products Buyer expects to purchase from Seller pursuant to this Agreement ("**Forecast**"), for which the following percentages shall be a binding supply obligation upon Seller and binding purchase obligation upon Buyer as follows:

Month M	[***] of Forecast volume
Month M+1	[***] of Forecast volume

However, in the event that Buyer's Forecast provides less than [***] notice of an increase in a specific month's Forecast, as compared against the prior two months' Forecasts, then Seller will use commercially reasonable efforts to supply such volume in excess of such originally forecasted volume, but shall not be deemed in breach of its supply obligations for failure to supply such excess volume.

For purposes of clarification, if Buyer issues a Forecast on January 1, 2021 requesting the following volumes of [***] in January 2021 (Month M) and [***] in February (Month M+1), then Buyer shall be obligated to purchase and Seller shall be obligated to supply no less than [***] in January 2021 (Month M), [***] in February 2021 (Month M+1). Thereafter Buyer's subsequent Forecasts shall not include any Product volumes less than the foregoing volumes.

3.2 Purchase Orders. During the Term of this Agreement, based upon Buyer's Forecast for the following calendar month's Product requirements, Seller shall advise Buyer of the respective volumes for each Product to be delivered based upon the Buyer's total Forecast volume for the following calendar month. Thereafter, on or before the [***] each calendar month, Buyer will issue a purchase order for the following calendar month with quantity of Products for the calendar month and requested Delivery Dates ("**Purchase Order**"). Any Purchase Order issued by Buyer shall be consistent with the Forecast. All standard, pre-printed terms and conditions as set forth on such Purchase Order shall be superseded by the terms herein.

3.3 Order Confirmations. Within [***] of receipt of Buyer's Purchase Order, Seller shall confirm the receipt of the Purchase Order and discuss with Buyer adjustments, if any, to the Delivery Dates proposed. Subject to Section 3.1 and 3.2, Seller shall thereafter issue an order confirmation, confirming acceptance of the Purchase Order, and any additional Product volume(s) to the extent in excess of the volumes described in the most recent Forecast, which Seller agrees to supply and corresponding Delivery Dates ("**Order Confirmation**"). An Order Confirmation issued by Seller shall become a binding purchase obligation upon Buyer and binding supply obligation upon Seller. All standard, pre-printed terms and conditions as set forth on such Order Confirmation shall be superseded by the terms herein.

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3.4 Buyer Right to Amend Purchase Orders. Buyer may request changes to the volume of Product, Delivery Dates as set forth in the Purchase Order at any time before the delivery (“**Change Order Request**”). Within 3 business days of such Change Order Request, Seller shall submit to Buyer an estimate of the impact of the Change Order Request. Upon the parties’ agreement of such Change Order Request, Buyer shall then submit a revised Purchase Order incorporating the accepted changes and Seller shall issue a revised Order Confirmation consistent with such accepted changes.

3.5 Maximum Supply Obligation. For calendar year [***], Buyer estimates that its requirement for Product is about [***]. Buyer may elect to purchase and thereafter Supplier shall manufacture and supply to Buyer no less than [***] of the greater of (i) the volume purchased by Buyer in the prior calendar year or (ii) [***] (“**Maximum Supply Obligation**”). Notwithstanding the foregoing, in the event that Buyer wishes to purchase volume in excess of such Maximum Supply Obligation, the Parties shall negotiate additional or revised terms and conditions, if any, for such surplus volume. In the event that Seller is unable to supply such volume of Product in excess of the Maximum Supply Obligation, Purchaser may purchase such excess volume of Product from third parties.

4. SHIPMENT, PACKAGING, DELIVERY, ACCEPTANCE AND WAREHOUSING

4.1 Intentionally omitted.

4.2 Changes in Volume or Delivery Dates. If either Party requests changes to quantity or Delivery Date of accepted Purchase Orders, the Parties shall in good faith accommodate such requested changes. Such accommodations shall not be construed as a waiver of any right of either Party hereunder.

4.3 Minimum Order Quantity; Partial Delivery. Buyer shall only order Product in minimum order quantities of either (a) [***] or (b) [***]. However, Seller shall have the right to issue an Order Confirmation reflecting for the aggregate volume of such Purchase Order in any combination of (a) and (b) bulk equipment. Unless otherwise expressly agreed to by the Parties in writing, Seller may not make partial delivery of Products less than the foregoing minimum order quantity to Buyer.

4.4 Packaging and Labeling. Seller shall properly pack, mark, and ship Products as instructed by Buyer and otherwise in accordance with applicable Law and industry standards, and shall provide Buyer with shipment documentation showing the Purchase Order number, Seller's identification number for the subject Products, the quantity of [***] and/or [***] in shipment, Seller's name, the bill of lading number, and the country of origin.

4.5 Nonconforming Products; Remedies; Independent Testing. If Buyer claims the Products delivered under one or more Purchase Orders subject to this Agreement are Nonconforming Products, Buyer shall submit to Seller (a) retain samples for Seller’s analysis and (b) a report of Buyer’s findings and/or an analysis explaining in detail the basis of Buyer’s rejection. If Seller accepts Buyer’s claim of Nonconforming Products, then as Buyer’s exclusive remedy and at Seller’s option, Seller shall either: (i) issue to Buyer a credit memorandum for such Nonconforming Products or (ii) replace such volume of Nonconforming Products. If the Parties fail to agree on the validity of Buyer’s Nonconforming Products claim, the rejected Product and Seller’s retention sample will be reviewed for conformity with the Product Specification by an independent testing laboratory agreed upon by the Parties. The result of such independent laboratory analysis shall be binding on the Parties solely for the purpose of determining whether Buyer’s claim was valid. If such laboratory concludes that Buyer’s rejection was unjustified, Buyer shall pay Seller for such volume of Product in question and reimburse Seller for any and all costs associated with such independent testing. However, if such laboratory concludes that Buyer’s rejection was justified, then Seller will reimburse Buyer for any and all costs associated with such independent testing in addition to undertaking either (i) or (ii) above.

4.6 Title and Risk of Loss. Title and risk of loss of Product shall transfer from Seller to Buyer at the Delivery Location.

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4.7 Warehousing. Seller will maintain at any time during the Term, at a warehouse [***], no less than [***] of Products of safety stock, from which Seller will ship Products to Buyer's RI Subsidiary's facility. For the avoidance of doubt, Seller's failure to comply with the obligations set forth in this Section 4.7 shall not, under any circumstance, be deemed a material breach of this Agreement.

5. PRICE AND PAYMENT

5.1 Price. The Price for Products subject to each Purchase Order shall be the respective base price for the Products as set forth in Exhibit B as adjusted for applicable Price Reduction when applicable purchase range is reached at or before the issuance of the Purchase Order. Prices are applicable for the Delivery Location and the Incoterms as described in Exhibit B. If any changes to terms and Delivery Location are desired, a reasonable adjustment directly attributed to the changes may be agreed between the Parties. All Prices include, and Seller is solely responsible for, all costs and expenses relating to packing, crating, boxing, transporting (based upon delivery terms in Exhibit B), loading, customs, taxes, tariffs and duties, insurance, and any other similar financial contributions or obligations relating to the production, manufacture, sale, and delivery of the Products. Subject to Section 5.2, all Prices are firm and are not subject to change for any reason, including changes in market conditions, increases in raw material, component, labor, or overhead costs, or because of labor disruptions or fluctuations in production volumes.

5.2 Annual Price Adjustment. On or before [***], after [***] by Seller for the following year, the unit costs of [***] will be updated by Seller and the impact, if a Product cost will be determined by Seller. Shortly thereafter, Seller shall advise Buyer [***] to manufacture [***] based upon such [***]. To calculate such aggregate increase or decrease, Seller will use [***] as the baseline to compare costs in the (a) [***] and (b) [***]. Commencing on [***] and for the remaining Term of this Agreement, such cost differential will be multiplied by [***] and rounded to the nearest whole cent and will be added/subtracted [***] from the Price.

5.3 Intentionally omitted.

5.4 Invoicing. Upon delivery of Product, Seller shall issue an invoice to Buyer with applicable Prices, as adjusted for Price Reduction. Upon request from Buyer for additional invoicing requirements for Buyer's internal accounting practices and controls, Seller shall use commercially reasonable efforts to accommodate such request for such information.

5.5 Rebates. For all the volume of Products purchased and paid for in a given calendar year reaching each purchase range as per Exhibit B, the corresponding Price Reduction shall apply. Within [***] days of reaching each such purchase ranges, Seller shall issue Rebates credits for Products previously purchased, which the Buyer may instruct Seller to apply to one or more unpaid and Buyer-approved invoices.

5.6 Payment Terms. Buyer shall pay Seller within [***] from the date of properly issued invoices. If there are any discrepancies or disputes about any part of the invoice, the undisputed portion shall be paid within the original payment term while the Parties discuss in good faith to resolve the discrepancy or dispute.

5.7 Remedies for Late Payment. In the event Buyer fails to remit timely payment pursuant to Section 5.6 [Payment Terms], Seller may elect to (i) suspend the supply of Product; or (ii) charge late payment interest equal to the maximum amount permissible by Law. Upon the full payment of Buyer's outstanding invoices, Seller shall immediately resume the supply of Product.

6. TERM; TERMINATION

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6.1 Term. The term of Agreement commences on the Effective Date and continues until September 30, 2023, unless terminated otherwise as per this Section 6 (the "**Term**"). No less than six (6) months prior to the end of the Term, the Parties shall confer and negotiate any extension of the Term of this Agreement and any other terms and conditions, if any.

6.2 Termination.

(a) Either Party may terminate this Agreement upon written notice to the other Party, if the other Party (i) becomes insolvent or is generally unable to pay, or fails to pay, its debts as they become due; (ii) files or has filed against, a petition for voluntary or involuntary bankruptcy or otherwise becomes subject, voluntarily or involuntarily, to any proceeding under any domestic or foreign bankruptcy or insolvency Law; (iii) seeks reorganization, arrangement, adjustment, winding-up, liquidation, dissolution, composition, or other relief with respect to it or its debts; (iv) makes or seeks to make a general assignment for the benefit of its creditors; or (v) applies for or has appointed a receiver, trustee, custodian, or similar agent appointed by order of any court of competent jurisdiction to take charge of or sell any material portion of its property or business.

(b) Buyer may terminate this Agreement upon written notice to Seller, (i) if Seller is in material breach of any obligation, representation, or warranty under this Agreement and either the breach cannot be cured or, if the breach can be cured, it is not cured by Seller within a commercially reasonable period of time under the circumstances, in no case exceeding thirty (30) calendar days following Seller's receipt of Notice of such breach, or (ii) if a Force Majeure Event affecting the Seller's performance of this Agreement exceeds 30 days.

(c) Seller may terminate this Agreement upon written notice to Seller, (i) if Buyer is in material breach of any obligation, representation, or warranty under this Agreement, and either the breach cannot be cured or, if the breach can be cured, it is not cured by Buyer within a commercially reasonable period of time under the circumstances, in no case exceeding thirty (30) calendar days following Buyer's receipt of Notice of such breach, or (ii) if a Force Majeure Event affecting Buyer's performance of this Agreement exceeds 30 days.

6.3 Any termination under this Section 6 is effective on a Party's receipt of the other Party's notice of termination or any later date set out in the notice.

6.4 Notwithstanding any other provisions of this Agreement, if Seller fails to deliver the Products as required under this Agreement, Buyer may purchase such volumes of Product as necessary to allow Buyer to satisfy Buyer's manufacturing obligations (a) at any time during the term of this Agreement to avoid shutdown of Buyer's operation, and (b) during such cure period as described in Sec. 6.2(b) above.

7. CONFIDENTIALITY

7.1 From time to time during the Term, either Party (as the "**Disclosing Party**") may disclose or make available to the other Party (as the "**Receiving Party**") information about its business affairs, goods and services, forecasts, confidential information, and materials, Intellectual Property Rights, trade secrets, third-party confidential information, and other sensitive or proprietary information, such information, whether orally or in written, electronic, or other form or media, and whether or not marked, designated, or otherwise identified as "confidential" constitutes "**Confidential Information**" hereunder. Confidential Information excludes information that, at the time of disclosure and as established by written records: (i) is or becomes generally available to and known by the public other than as a result of, directly or indirectly, any breach of this Section 7. by the Receiving Party or any of its Representatives; (ii) is or becomes available to the Receiving Party on a non-confidential basis from a third-party source, provided that such third party is not and was not prohibited from disclosing such Confidential Information; (iii) was known by or in the possession of the Receiving Party or its Representatives before being disclosed by or on behalf of the Disclosing Party; (iv) was or is independently developed by the Receiving Party without reference to or use of, in whole or in part, any of the Disclosing Party's Confidential Information; or (v) is required to be disclosed pursuant to applicable Law.

7.2 Protection of Confidential Information. During the Term of this Agreement and for a 5 year period thereafter, the Receiving Party shall:

(a) protect and safeguard the confidentiality of the Disclosing Party's Confidential Information with at least the same degree of care as the Receiving Party would protect its own Confidential Information, but in no event with less than a commercially reasonable degree of care;

(b) not use the Disclosing Party's Confidential Information, or permit it to be accessed or used, for any purpose other than to exercise its rights or perform its obligations under this Agreement; and

(c) not disclose any such Confidential Information to any Person, except to the Receiving Party's Representatives who need to know the Confidential Information to assist the Receiving Party, or act on its behalf, to exercise its rights or perform its obligations under this Agreement.

7.3 The Receiving Party shall be responsible for any breach of this Section 7 caused by any of its Representatives. The provisions of this Section 7 shall survive termination or expiration of this Agreement for any reason for a period of one (1) year after such termination or expiration. On the expiration or earlier termination of this Agreement or at any time during or after the Term, at the Disclosing Party's written request, the Receiving Party and its Representatives shall promptly destroy all Confidential Information and copies thereof that it has received under this Agreement and certify as such to the Disclosing Party. The foregoing obligations shall not apply to the extent that Confidential Information is saved in automatic email archives and back-up systems for which destruction shall follow the regular process of such archive or back-up system, provided the Receiving Party continues to comply with the terms of this Agreement with respect to the Confidential Information involved in such archive or back-up systems.

7.4 This Section 7 shall exclusively apply to only Confidential Information disclosed by either Party in connection with this Agreement. In the event of any conflict between the terms and provisions of this Section 7 and those of any other provision in this Agreement, the terms and provisions of this Section 7 will prevail.

7.5 The terms and conditions of this Section 7 and the [***] Agreement effective [***] between [***] and Buyer, as amended from time to time, shall have no effect on each other or any activities subject thereto.

8. CERTAIN SELLER OBLIGATIONS

8.1 General Compliance with Laws.

(a) Seller shall at all times comply with all Laws applicable to this Agreement and in connection with performing its obligations under this Agreement, including Seller's manufacturing and sale of the Products as well as Seller's transportation, transfer and transloading procedures, storage and handling of the Products, and any other applicable industry standards for the Products. Without limiting the generality of the foregoing, Seller shall: (i) at its own expense, maintain all certifications, credentials, licenses, and permits necessary to conduct its business relating to the sale of the Product; and (ii) not engage in any activity or transaction involving the Products, by way of shipment, use, or otherwise, that violates any Law.

(b) Buyer shall at all times comply all Laws applicable to this Agreement and in connection with performing its obligations under this Agreement, including Buyer's transportation, transfer and transloading procedures, storage and handling of the Products, and any other applicable industry standards for the Products. Without limiting the generality of the foregoing, Buyer shall: (i) at its own expense, maintain all certifications, credentials, licenses, and permits necessary to conduct its business relating to the use of the Product; and (ii) not engage in any activity or transaction involving the Products, by way of shipment, use, or otherwise, that violates any Law.

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8.2 Provision of Export-Import Information. Without prejudice to Buyer's other rights under this Agreement, on Buyer's request, Seller shall promptly provide all information about the Products necessary or useful in connection with Buyer's evaluation of export and import issues of Buyer's products.

8.3 Disclosure of Ingredients and Materials. On Buyer's request, Seller shall confirm such volumes of conflict minerals, if any, incorporated in the Products, the amount of such conflict minerals, and information concerning any changes in or additions to such conflict mineral volumes or alternatively, Seller may provide representations or certifications, as requested by Buyer, that Buyer may rely on in connection with conflicts mineral regulations, as codified in Dodd-Frank Wall Street Reform and Consumer Protection Act and Rule 13p-1 and Form SD under the Securities Exchange Act of 1934, and all similar, statutes and regulations.

8.4 Hazard Disclosure. Buyer acknowledges that there are hazards associated with the use of Product. Seller shall provide Buyer with the Safety Data Sheet setting forth the hazards and safety information relating to the Product ("**SDS**"). Buyer hereby assumes all responsibility for warning its employees and its independent contractors who may handle, may be exposed to or otherwise use the Product of such hazards as disclosed by the Seller. Seller shall promptly Notify Buyer in writing within thirty (30) days of the date Seller first becomes aware, from time to time, of any additional hazards and shall furnish Buyer, when available, updated versions of any SDS for the Product incorporating any such new or additional hazard and safety information. For each shipment of Products, Seller shall include appropriate labels on Products, containers, and packing of any hazardous or restricted material that is an ingredient or a part of the shipment, together with such special handling instructions as may be necessary to advise logistics providers, handlers of the Products, and Personnel of how to exercise that measure of care and precaution that will comply with any applicable Laws and prevent bodily injury or property damage in the handling, transportation, processing, use, or disposal of the Products, containers, and packing.

8.5 Strategic Supply. Seller acknowledges that Buyer relies on Seller's supply of Products hereunder to support Seller's entire operation in light of the terms of this Agreement. Any disruption of supply of Products from Seller may result in grave consequences to Buyer's entire business. Accordingly, Seller shall use commercially reasonable efforts to prioritize the supply of products to Buyer [***].

8.6 Seller shall Notify the Buyer of any plans to make a material change to the materials or manufacturing processes in effect as of Effective Date in connection with the manufacture of Products, at least six months in advance.

9. PRODUCT WARRANTIES

9.1 Product Warranties. Seller warrants to Buyer that upon delivery, the Product: (a) such Products shall conform to the Specifications, (b) Buyer will receive good and marketable title to the Products, free and clear of all encumbrances and liens of any kind, and (c) to the best of Seller's knowledge, at the time of delivery, there is no pending litigation alleging, or Seller has not received any written notice of any action or claim that alleges, that the Product specified herein and the product per se alone, without any modification or being combined with another product or component, infringes any valid claim of any unexpired issued United States or German patent, trademark or copyright of any third party or misappropriates the know-how of any third party. SELLER MAKES NO OTHER WARRANTY OF, AND SHALL HAVE NO LIABILITY FOR, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT (EVEN IF SELLER IS AWARE OF SUCH PURPOSE) OR OTHERWISE CONCERNING THE PRODUCTS, WHETHER EXPRESS OR IMPLIED, AT LAW OR IN EQUITY. SELLER SHALL HAVE NO LIABILITY OTHER THAN THOSE EXPRESSED IN THIS AGREEMENT. NO OTHER WARRANTY OR LIABILITY, EXPRESS OR IMPLIED, AND WHETHER ARISING BY OPERATION OF LAW OR CUSTOM, SHALL APPLY.

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- 9.2 Remedies for Breach of Warranties. Subject to Sections 11.3 and 11.4, if Products do not comply with the warranties in this Agreement, Seller shall:
- (a) replace such Non-Conforming or infringing Products with a product having substantially the same functionality;
 - (b) procure from third-party the right to continue using such Product by Seller obtaining an intellectual property license for the Product;
 - (c) modify the infringing Product so they become non-infringing; or
 - (d) credit the Price of such defective Products plus all other costs incurred by the Buyer in connection with such breach of warranty or non-conformance, including any inspection, test and transportation charges paid by Buyer, less any applicable discounts, rebates, or credits.

In such an event, Seller shall take custody of such Products at Buyer's location immediately upon notification by Buyer. To the extent Buyer's claim is based upon infringement of third party intellectual property rights, the foregoing remedy elected by Seller as set forth in Section 9.2 shall be Buyer's exclusive remedy.

10. REPRESENTATIONS AND WARRANTIES

10.1 Seller represents and warrants to Buyer that (i) it has the full right, corporate power, and authority to enter into this Agreement, to grant the rights and licenses granted under this Agreement, and to perform its obligations under this Agreement; (ii) the execution of this Agreement by its Representative whose signature is set forth at the end hereof has been duly authorized by all necessary corporate action of the Party; and (iii) when executed and delivered by each of Buyer and Seller, this Agreement will constitute the legal, valid, and binding obligation of Seller, enforceable against Seller in accordance with its terms.

10.2 Buyer represents and warrants to Seller that (i) it has the full right, corporate power, and authority to enter into this Agreement, to grant the rights and licenses granted under this Agreement, and to perform its obligations under this Agreement; (ii) the execution of this Agreement by its Representative whose signature is set forth at the end hereof has been duly authorized by all necessary corporate action of the Party; and (iii) when executed and delivered by each of Buyer and Seller, this Agreement will constitute the legal, valid, and binding obligation of Buyer, enforceable against Buyer in accordance with its terms.

11. INDEMNIFICATION; LIMITATION OF LIABILITY

11.1 Seller shall indemnify Buyer and its subsidiaries, affiliates, successors or assigns, and their respective directors, officers, shareholders and employees from and against any and all third party losses, damages, suits, civil actions, claims, costs, judgments, penalties or expenses (including, but not limited to, reasonable attorneys' fees) whatsoever ("**Claims**") to the extent such arising out of, or in connection with,

- (i) any breach by Seller of its representations, warranties, covenants or obligations as set forth in this Agreement including Seller's warranty that to the best of Seller's knowledge, at the time of delivery, there is no pending litigation alleging, and Seller has not received any written notice of any action or claim that alleges, that the Product specified herein and the product per se alone, without any modification or being combined with another product or component, infringes any valid claim of any unexpired issued United States or German patent or patent publications (to the extent the issued claims are substantially identical to the published claims), trademark or copyright of any third party or misappropriates the know-how of any third party;
- (ii) Seller's failure to comply with applicable Laws, codes, ordinances, orders, rules and regulations of all local, state and federal governments and agencies and instrumentalities in connection with Seller's performance of this Agreement; or
- (iii) Seller's, or its agent's, contractor's or subcontractor's negligent, reckless or wanton actions or omissions or willful misconduct in connection with Seller's performance of this Agreement;

in each case of 11.1(i) to (iii), except to the extent that such Claims are otherwise subject to Buyer's indemnity obligations as set forth below in Section 11.2.

11.2 Buyer shall indemnify Seller and its subsidiaries, affiliates, successors or assigns, and their respective directors, officers, shareholders and employees from and against Claims to the extent arising out of, or in connection with:

- (i) any breach by Buyer of its representations, warranties, covenants or obligations as set forth in this Agreement;
- (ii) Buyer's failure to comply with applicable laws, codes, ordinances, orders, rules and regulations of all local, state and federal governments and agencies in connection with Buyer's performance of this Agreement;
- (iii) infringement of any U.S. or German issued patent or patent publication (to the extent the issued claims are substantially identical to the published claims), trademark or copyright of any third party to the extent such Claim arises out of or is in connection with use of the Products by Buyer in Buyer's products; or
- (iv) Buyer's, or its agent's, contractor's or subcontractor's negligent, reckless or wanton actions or omissions or willful misconduct in connection with Buyer's performance of this Agreement;

in each case of 11.2(i) to (iv), except to the extent that such Claims are otherwise subject to Seller's indemnity obligations as set forth above in Section 11.1.

11.3 CONSEQUENTIAL DAMAGES EXCLUSION. NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES, WHETHER THE CLAIM IS BASED ON WARRANTY, CONTRACT, TORT, STRICT LIABILITY, NEGLIGENCE OR OTHERWISE (INCLUDING THE FOREGOING INDEMNIFICATION PROVISIONS) OR OTHERWISE, OF ANY KIND, ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PERFORMANCE, THE SUSPENSION OF PERFORMANCE, THE FAILURE TO PERFORM OR THE TERMINATION OF THIS AGREEMENT. SUCH EXCLUDED SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES INCLUDE LOSS OF PROFITS, LOSS OF GOODWILL, LOSS OF PRODUCTION, LOSS OF USE, OR ANY OTHER INDIRECT DAMAGE OR LOSS OF ANY KIND OR CHARACTER.

11.4 LIMITATION OF LIABILITY.

(A) SUBJECT TO SECTION 11.4(B), UPON SATISFACTORY PROOF OF CLAIM BY BUYER OF ITS ACTUAL AND DIRECT DAMAGES AND AS BUYER'S EXCLUSIVE REMEDY, SELLER'S TOTAL LIABILITY FOR ANY AND ALL CLAIMS WHATSOEVER INCLUDING, ANY THIRD PARTY CLAIMS, PRODUCT RECALL, AND SELLER'S INDEMNITY OBLIGATION SET FORTH IN SECTION 11.1, SHALL NOT EXCEED THE PRICE OF PRODUCT SUPPLIED (OR TO HAVE BEEN SUPPLIED) IN RESPECT OF WHICH DAMAGES ARE CLAIMED.

(B) NOTWITHSTANDING THE FOREGOING, SUPPLIER'S LIMITATION OF LIABILITY SHALL NOT APPLY TO ANY LIABILITY OR CLAIMS UNDER THIS AGREEMENT ARISING FROM ANY GROSS NEGLIGENCE, INTENTIONAL OR WILLFUL MISCONDUCT, FRAUD, OR BREACH OF CONFIDENTIALITY.

11.5 LIMITATIONS PERIOD. ANY CLAIM BY BUYER CONCERNING THE AMOUNTS INVOICED, PRODUCT SUPPLIED OR TO HAVE BEEN SUPPLIED HEREUNDER, OR ANY OTHER CLAIM ARISING FROM THE PERFORMANCE OF THE OBLIGATIONS HEREUNDER SHALL BE SUBJECT TO A LIMITATIONS PERIOD OF THREE (3) YEARS FROM THE DELIVERY DATE OF THE PRODUCTS FORMING THE BASIS OF SUCH CLAIM.

12. MISCELLANEOUS

12.1 Further Assurances. Upon Buyer's reasonable request, Seller shall, at its sole cost and expense, execute and deliver all such further documents and instruments, and take all such further acts, necessary to give full effect to this Agreement.

12.2 Entire Agreement. This Agreement, including and together with any related exhibits, schedules, attachments, and appendices, together with the individual Purchase Orders, constitutes the sole and entire agreement of the Parties

with respect to the subject matter contained herein and therein, and supersedes all prior and contemporaneous understandings, agreements, representations, and warranties, both written and oral, regarding such subject matter.

12.3 Survival. Subject to the limitations and other provisions of this Agreement: (a) the representations and warranties of the Parties contained herein shall survive expiration or earlier termination of this Agreement; and (b) Section 1 of this Agreement, as well as any other provision that, in order to give proper effect to its intent, should survive such expiration or earlier termination of this Agreement.

12.4 Notices. All notices, requests, consents, claims, demands, waivers, and other communications under this Agreement (each, a "**Notice**", and with the correlative meaning "**Notify**") must be in writing and addressed to the other Party at its address set forth below (or to such other address that the receiving Party may designate from time to time in accordance with this Section). Unless otherwise agreed herein, all Notices must be delivered by personal delivery or nationally recognized overnight courier. Except as otherwise provided in this Agreement, a Notice is effective only (a) on receipt by the receiving Party, and (b) if the Party giving the Notice has complied with the requirements of this Section.

Notice to Buyer: [***]

Notice to Seller: [***]

12.5 Severability. If any term or provision of this Agreement is invalid, illegal, or unenforceable in any jurisdiction, such invalidity, illegality, or unenforceability shall not affect any other term or provision of this Agreement or invalidate or render unenforceable such term or provision in any other jurisdiction; provided, however, that if any fundamental term or provision of this Agreement, is invalid, illegal, or unenforceable, the remainder of this Agreement shall be unenforceable. Upon a determination that any term or provision is invalid, illegal, or unenforceable, the Parties shall negotiate in good faith to modify this Agreement or a court of competent jurisdiction may modify to effect the original intent of the Parties as closely as possible in order that the transactions contemplated hereby be consummated as originally contemplated to the greatest extent possible.

12.6 Amendment and Modification. No amendment to or modification of this Agreement or any Purchase Order is effective unless it is in writing and signed by an authorized Representative of each Party.

12.7 Waiver. (a) No waiver under this Agreement is effective unless it is in writing, identified as a waiver to this Agreement and signed by an authorized representative of the Party waiving its right. (b) Any waiver authorized on one occasion is effective only in that instance and only for the purpose stated, and does not operate as a waiver on any future occasion. (c) None of the following constitutes a waiver or estoppel of any right, remedy, power, privilege, or condition arising from this Agreement: (i) any failure or delay in exercising any right, remedy, power, or privilege or in enforcing any condition under this Agreement; or (ii) any act, omission, or course of dealing between the Parties.

12.8 Assignment. Neither party may assign any of its rights or delegate any of its obligations under this Agreement without the other party's prior written consent. This Agreement is binding on and inures to the benefit of the Parties to this Agreement and their respective permitted successors and permitted assigns.

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12.9 Governing Law and Arbitration. The laws of the State of New York shall govern this Agreement without regard to its conflict of law provisions that could require application of the law of another jurisdiction. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Agreement. The Parties shall in good faith attempt to settle all controversies, claims, disputes and differences that may arise out of or in connection with this Agreement by way of negotiations initiated by a Party by written notice to the other setting forth in reasonable detail the facts and circumstances of any such controversy, claim, dispute or difference. If the Parties fail to settle any such controversy, claim, dispute or difference within thirty (30) days following the date of the initial written notice thereof, such controversy, claim, dispute or difference shall be submitted to binding arbitration in New York, NY. The Parties agree that such arbitration shall be administered by the American Arbitration Association applying its then current Commercial Arbitration Rules. Each Party shall select an arbitrator and request the two (2) selected arbitrators to select a third neutral arbitrator. If the two (2) arbitrators fail to select a third arbitrator on or before the tenth (10th) day after the second arbitrator was selected, either Party is entitled to request the American Arbitration Association to appoint the third neutral arbitrator in accordance with its rules. Before beginning the hearings, each arbitrator must provide an oath or undertaking of impartiality. The arbitrators shall have the power to grant any remedy or relief that they deem just and equitable, including but not limited to equitable and injunctive relief, whether provisional or final in nature, and any such equitable or injunctive measures ordered by the arbitrators may be enforced by any court of competent jurisdiction. A final award shall be rendered within one year of the notice to arbitrate. Notwithstanding the foregoing, either party shall be entitled to seek immediate injunctive relief in the event of any breach or threatened breach of the provisions of Section 7 in a competent judicial forum.

12.10 Force Majeure. Any delay or failure of either Party to perform its obligations under this Agreement will be excused to the extent that the delay or failure was caused by an event beyond such Party's reasonable control, without such Party's fault or negligence, and that by its nature could not have been reasonably foreseen by such Party or, if it could have been reasonably foreseen, was unavoidable with exercise of reasonable diligence and foresight (which events may include but are not limited to natural disasters (such as fire, flood, Acts of God), weather conditions, pandemic, epidemic, disease, accident, embargoes, explosions, riots, wars, or acts of terrorism or sabotage, governmental laws, rules, regulations, orders or action (whether valid or not valid), shortages of or inability to obtain suitable or sufficient energy, labor (strikes, lockout or other acts of workers), machinery, facilities, raw materials, transportation, supplies or other resources or services. (each, a "**Force Majeure Event**"). All or some of the quantities of Product deliverable under, or other performance by Seller under the Agreement that is affected by a Force Majeure Event may, in the sole and absolute discretion of the Party declaring Force Majeure, be eliminated and/or suspended from the operation of the Agreement (with the elimination and/or suspension of other Party's corresponding obligations), but this Agreement shall remain otherwise unaffected). Each party shall use commercially reasonable efforts to give the other party prompt written notice of any event or circumstance that is reasonably likely to result in a Force Majeure Event, and the anticipated duration of such Force Majeure Event. Such party declaring Force Majeure shall use all diligent efforts to end the Force Majeure Event, ensure that the effects of any Force Majeure Event are minimized and resume full performance under this Agreement. In addition to its other rights under this Agreement or the Law, during any Force Majeure Event, Buyer may purchase up to two (2) months' of its requirements for Products from third parties and the Parties shall discuss in good faith the coordination of supply and delivery after the conclusion of such Force Majeure Event.

12.11 Audits.

(a) Buyer's Audit Right. During the Term and for a period of one (1) year thereafter, Buyer, upon reasonable notice and during normal working hours, shall have the right to retain an independent, third-party auditor, at Buyer's sole expense, mutually agreed upon by the Parties which agreement shall not be unreasonably withheld, conditioned or delayed to audit the prior twenty-four (24) months' applicable documents, information, or other data as provided by Seller for the sole purpose of confirming Seller's compliance with its obligations as set forth in Section 5.2 [Annual Price Adjustment]. Upon execution of a reasonable confidentiality agreement, Seller will provide such third party auditor with access to Seller's books and records and other supporting documents for the sole purpose of verifying the accuracy of information in connection with Section 5.2 [Annual Price Adjustment]. Buyer's third party auditor shall not share in written materials, computer-readable form, or oral communication, or provide Buyer with access to Seller's documents, and such audit shall only confirm either the accuracy of Seller's price adjustment or the appropriate price adjustment. Buyer shall not review or otherwise access Seller's documents provided to such third

party auditor. Such audit shall be conducted during normal working hours and upon thirty (30) days' prior written notice.

In addition, during the Term, Buyer, upon reasonable notice and during normal working hours, shall have the right at Buyer's sole expense to audit the prior [***] applicable documents, information, or data concerning Seller's [***] facility; Seller will make available for Buyer's inspection during such audit such applicable documents, information for the sole purpose of confirming Seller's quality systems in place. Such audit shall be conducted during normal working hours and upon thirty (30) days' prior written notice. In addition, in the event that Buyer is subject to audit obligations from its third party customers, the Parties will mutually agree on the scope of extending such audit to Seller's Affiliate manufacturing site in [***].

(b) Seller's Audit Right. During the Term and for a period of [***] thereafter, Seller, upon reasonable notice and during normal working hours, shall have the right to retain an independent, third-party auditor mutually agreed upon by the Parties, which agreement shall not be unreasonably withheld, conditioned or delayed, to audit any applicable information, certification or other data provided by Buyer for the sole purpose of confirming Buyer's compliance with Section 2.2. Upon execution of a reasonable confidentiality agreement, Buyer will provide such third party auditor with access to Buyer's documents for the sole purpose of verifying the accuracy of Buyer's obligations as set forth in Section 2.2. Seller's third party auditor shall not share or provide Seller with access to Buyer's books and records and other supporting documents, and such audit shall only confirm Seller's compliance with its purchase obligations hereunder. Seller shall not review or otherwise access Buyer's documents provided to such third party auditor. Such audit shall be conducted during normal working hours and upon [***] prior written notice.

12.12 Relationship of Parties. Nothing in this Agreement creates any agency, joint venture, partnership, or other form of joint enterprise, employment, or fiduciary relationship between the Parties. Seller is an independent contractor under this Agreement. Neither Party has any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement, or undertaking with any third party.

12.13 Public Filing. The Parties recognize that Buyer may be required to file certain material contracts with the U.S. Securities and Exchange Commission. If this Agreement is so determined to be subject to such requirements, Buyer shall redact commercial terms and other business sensitive details to the extent permissible under applicable Law and file such redacted version in public filing.

12.14 Third Party Beneficiary. The Parties agree and acknowledge that there are no third party beneficiaries of this Agreement, including but not limited to Aspen Aerogels Rhode Island, LLC or Evonik Corporation or other Affiliates of Seller.

12.15 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement. A signed copy of this Agreement delivered by facsimile, e-mail or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

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IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the Effective Date.

ASPEN AEROGELS, INC.

By: [***]
Name: [***]
Title: [***]
1/31/2021

SILBOND CORPORATION

By: [***]
Name: [***]
Title: [***]
2/3/2021

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Exhibit A
Specifications for Products

1. All Product shipments shall include a Certificate of Analysis confirming that the delivered Products meet this Specification.
2. Products shall be packaged in [***].
3. All deliveries shall include Products' Safety Data Sheet
4. The Specification may be modified by mutual written consent of authorized representatives of the Parties.

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[**]

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Exhibit B
Products Pricing, Price Reductions and Rebates

a. Base Price

i. [***]: [***] Incoterms® 2020 delivery terms. [***] or alternate shipping arrangement to RI Subsidiary destination agreed between the Parties.

ii. [***]: [***] Incoterms® 2020 delivery terms.

b. Rebates and Price Reductions

i. The Price Reduction for Buyer's cumulative volume of Products purchased during each calendar year shall equal:

[***]

ii. The foregoing rebate levels shall be prorated for any partial calendar year in the event that this Agreement expires or terminates before [***].

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ASPEN AEROGELS, INC.

NON-EMPLOYEE DIRECTOR COMPENSATION POLICY¹

The Board of Directors of Aspen Aerogels, Inc. (the “Company”) has approved the following Non-Employee Director Compensation Policy (this “Policy”) which establishes compensation to be paid to non-employee directors of the Company to provide an inducement to obtain and retain the services of qualified persons to serve as members of the Company’s Board of Directors.

Applicable Persons

This Policy shall apply to each director of the Company who is not an employee of, or consultant to, the Company or any Affiliate (each, an “Outside Director”). “Affiliate” shall mean a corporation which is a direct or indirect parent or subsidiary of the Company, as determined pursuant to Section 424 of the Internal Revenue Code of 1986, as amended.

Equity Grants

All equity grant amounts set forth herein shall be subject to automatic adjustment in the event of any stock split or other recapitalization affecting the Company’s common stock.

Annual Restricted Stock Grants

Commencing in calendar year 2015, each Outside Director shall be granted (i) restricted shares of the Company’s common stock (the “Annual Stock Grant”) equal in value to \$51,000 under the Company’s 2014 Employee, Director and Consultant Equity Incentive Plan or such plan in effect on the date of grant (the “Stock Plan”) and (ii) stock options to purchase shares of the Company’s common stock (the “Annual Option Grant”, and together with the Annual Stock Grant, the “Annual Equity Grant”) equal in value to \$34,000 under the Stock Plan each year on or about the time of the annual meeting of the Board of Directors following the Company’s annual meeting of stockholders; provided that if there has been no annual meeting of stockholders held by the first day of the third fiscal quarter, each Outside Director will still receive any Annual Equity Grant provided for under this Policy on the first day of the third fiscal quarter of such year. The number of shares of common stock to be granted to each Outside Director as his or her Annual Stock Grant shall be calculated using the fair market value of the Company’s common stock as of the grant date, which shall be deemed to be the closing price on such date of the Company’s common stock on a national securities exchange. The number of shares of common stock subject to the Annual Option Grant to be granted to each Outside Director as his or her Annual Option Grant shall be calculated using the fair value of the dollar amount of the Annual Option Grant computed in accordance with FASB ASC Topic 718. For any new Outside Director joining the Board of Directors after the date of the Annual Equity Grant, such new Outside Director shall receive equity grants on the first day of his or her service on the Board of Directors equal to the pro rata share of that year’s (i) Annual Stock Grant calculated by multiplying the number of days of such year that the such new director will serve by the quotient of \$51,000 divided by 365 and (ii) Annual Option Grant calculated by multiplying the number of days of such year that the such new director will serve by the quotient of \$34,000 divided by 365 and in each case calculating the number of shares using the methodology set forth above for Annual Equity Grants but calculated using the closing stock price and other values on such new Outside Director’s first day of service on the Board of Directors.

Terms for All Equity Awards

Unless otherwise specified by the Board of Directors or the Compensation and Leadership Development Committee (the “Compensation Committee”) at the time of grant, all equity awards granted under this Policy shall (

¹ This revised Non-Employee Director Compensation Policy replaces and supersedes the Company’s prior Non-Employee Director Compensation Policy, and became effective on February 24, 2021.

i) vest on the earlier of (a) one year from the date of the grant with respect to an Annual Equity Grant or (b) the day prior to the annual meeting for the fiscal year following the date of grant, subject to the Outside Director’s continued service on the Board of Directors, (ii) each stock option shall terminate ten years from the date of grant of such stock option, and (iii) each equity award shall be granted under the Company’s standard form of agreement unless on or prior to the date of grant the Board of Directors or the Compensation Committee shall determine that other terms or conditions shall be applicable prior to the grant of such equity award.

Such restricted stock and stock options shall become fully vested immediately prior to a Change of Control. “Change of Control” means the occurrence of any of the following events: (i) Any “Person” (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) becomes the “Beneficial Owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of the total voting power represented by the Company’s then outstanding voting securities (excluding for this purpose any such voting securities held by the Company or its affiliates or by any employee benefit plan of the Company) pursuant to a transaction or a series of related transactions; or (ii) (a) a merger or consolidation of the Company whether or not approved by the Board of Directors, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or the parent of such corporation) more than 50% of the total voting power represented by the voting securities of the Company or such surviving entity or parent of such corporation, as the case may be, outstanding immediately after such merger or consolidation; or (b) the sale or disposition by the Company of all or substantially all of the Company’s assets in a transaction requiring stockholder approval.

Cash Fees

Annual Cash Payments

The following annual cash fees shall be paid to the Outside Directors serving on the Board of Directors and the Audit Committee, Compensation Committee and Nominating and Governance Committee, as applicable.

Board of Directors or Committee of Board of Directors	Annual Retainer Amount for Chair (in lieu of the annual retainer amount for a member)	Annual Retainer Amount for Member
Board of Directors	\$70,000	\$35,000
Audit Committee	\$15,000	\$7,500
Compensation Committee	\$10,000	\$5,000
Nominating and Governance Committee	\$8,000	\$4,000

If the Company holds more than 12 board meetings in a calendar year, each Outside Director will receive a fee of \$1,500 for each additional board meeting attended in person and a fee of \$1,500 for each additional board meeting attended by telephone or by other means of communication. If the Company holds more than 12 meetings of the Audit Committee in a calendar year, each member of such committee will receive a fee of \$1,500 for each additional committee meeting attended in person and a fee of \$1,500 for each additional committee meeting attended by telephone or by other means of communication. If the Company holds more than 8 meetings of either of the Compensation Committee or the Nominating and Governance Committee in a calendar year, each member of such committee will receive a fee of \$1,500 for each additional committee meeting attended in person and a fee of \$1,500 for each additional committee meeting attended by telephone or by other means of communication.

Payment Terms for All Cash Fees

Cash payments payable to Outside Directors shall be paid quarterly in arrears as of the last day of each fiscal quarter.

Following an Outside Director’s first election or appointment to the Board of Directors, such Outside Director shall receive his or her cash compensation pro rated beginning on the date he or she was initially appointed or elected. If an Outside Director dies, resigns or is removed during any quarter, he or she shall be entitled to a cash payment on a pro rated basis through his or her last day of service.

Maximum Compensation

In any fiscal year that ends on or after December 31, 2018, the sum of the grant date fair value (determined as of the date of grant in accordance with FASB ASC Topic 718) of all awards made pursuant to the Stock Plan, to an individual as compensation for service as a non-employee director, together with cash compensation earned by the non-employee director during any fiscal year, shall not exceed \$500,000.

In a fiscal year in which a non-employee director serves the Company in another capacity (including as an interim officer), the non-employee director compensation limit shall not apply to any compensation arrangements established with respect to such service.

Expenses

Upon presentation of documentation of such expenses reasonably satisfactory to the Company, each Outside Director shall be reimbursed for his or her reasonable out-of-pocket business expenses incurred in connection with attending meetings of the Board of Directors and Committees thereof or in connection with other business related to the Board of Directors.

Amendments

The Nominating and Governance Committee or the Board of Directors shall review this Policy from time to time to assess whether any amendments in the type and amount of compensation provided herein should be adjusted in order to fulfill the objectives of this Policy.

CERTIFICATIONS UNDER SECTION 302

I, Donald R. Young, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Aspen Aerogels, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 4, 2021

/s/ Donald R. Young

Donald R. Young
President and Chief Executive Officer
(principal executive officer)

CERTIFICATIONS UNDER SECTION 302

I, John F. Fairbanks, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Aspen Aerogels, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 4, 2021

/s/ John F. Fairbanks

John F. Fairbanks

Vice President, Chief Financial Officer and Treasurer (principal financial officer and principal accounting officer)

CERTIFICATIONS UNDER SECTION 906

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), each of the undersigned officers of Aspen Aerogels, Inc., a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (the "Form 10-Q") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 4, 2021

/s/ Donald R. Young

Donald R. Young
President and Chief Executive Officer
(principal executive officer)

Dated: May 4, 2021

/s/ John F. Fairbanks

John F. Fairbanks
Vice President, Chief Financial Officer and Treasurer
(principal financial officer and principal accounting officer)

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.