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

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

AEROCLEAN TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

10455 Riverside Drive Palm Beach Gardens, Florida (Address of principal executive offices) **45-3213164** (I.R.S. Employer Identification No.)

33410 (Zip Code)

AEROCLEAN TECHNOLOGIES, INC. 2021 INCENTIVE AWARD PLAN

(Full title of the plan)

Jason DiBona c/o AeroClean Technologies, Inc. 10455 Riverside Drive Palm Beach Gardens, FL 33410 (833) 652-5326

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

Copies to: Valerie Ford Jacob, Esq. Freshfields Bruckhaus Deringer US LLP 601 Lexington Avenue New York, New York 10022 (212) 277-4000

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 Non-accelerated filer Accelerated filer Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. \Box

EXPLANATORY NOTE

The purpose of this Registration Statement on Form S-8 is to register 277,552 additional shares of common stock, par value \$0.01 per share (the "Shares"), of AeroClean Technologies, Inc. (the "Registrant"), to be reserved for issuance under the AeroClean Technologies, Inc. 2021 Incentive Award Plan (the "Incentive Award Plan"), which are in addition to the 1,386,364 Shares under the Incentive Award Plan registered on the Registration Statement on Form S-8 filed by the Registrant with the U.S. Securities and Exchange Commission (the "Commission") on November 29, 2021, Commission File No. 333-261396 (the "Prior Registration Statement"). Such additional 277,552 Shares reserved for issuance under the Incentive Award Plan became effective January 1, 2022 by operation of the "evergreen" provision contained in the Incentive Award Plan.

This Registration Statement relates to securities of the same class as those to which the Prior Registration Statement relates and is submitted in accordance with General Instruction E to Form S-8 regarding Registration of Additional Securities. Pursuant to Instruction E of Form S-8, the contents of the Prior Registration Statement are incorporated herein by reference and made part of this Registration Statement, except as amended hereby.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Information required by Part I to be contained in the Section 10(a) prospectus is omitted from this Registration Statement in accordance with Rule 428 under the Securities Act of 1933, as amended (the "Securities Act"), and the "Note" to Part I of Form S-8. The documents containing the information specified in this Part I of Form S-8 will be sent or given to the participants in the Incentive Award Plan covered by this Registration Statement, as specified by the Commission, pursuant to Rule 428(b)(1) under the Securities Act. Such documents are not required to be and are not filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act. These documents and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II hereof, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

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PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference

The following documents filed by the Registrant with the Commission are incorporated as of their respective dates in this Registration Statement by reference:

- (a) The Registrant's <u>annual report on Form 10-K for the fiscal year ended December, 31, 2021</u> (File No. 001-41096), filed with the Commission on April 1, 2022;
- (b) All other reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), since the end of the fiscal year covered by the Registrant document referred to in (a) above; and
- (c) The description of the Shares contained in and incorporated by reference into the Registrant's Registration Statement on Form 8-A filed with the Commission on November 19, 2021 and any amendment or report updating that description.

All other documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (except for any portions of the Registrant's Current Reports on Form 8-K furnished pursuant to Item 2.02 or Item 7.01 thereof and any corresponding exhibits thereto not filed with the Commission, and other documents or information deemed furnished but not filed under the rules of the Commission), prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents. Any statement contained herein or in a document all or a portion of which is incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 8. Exhibits

The exhibits listed on the exhibit index at the end of this Registration Statement are included in this Registration Statement.

EXHIBITS

Exhibit No.	Description							
<u>4.1</u>	Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-8 (File No. 333-261396) submitted to the Commission by the Registrant on November 29, 2021)							
<u>4.2</u>	Bylaws of the Registrant (incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-8 (File No. 333-261396) submitted to the Commission by the Registrant on November 29, 2021)							
<u>4.3</u>	Form of Common Stock Certificate of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Amended Draft Offering Statement (File No. 367-00296) submitted to the Commission by the Registrant on September 3, 2021).							
<u>5.1*</u>	Opinion of Freshfields Bruckhaus Deringer US LLP, counsel to the Registrant, regarding the legality of the securities being offered hereby (including consent)							
<u>23.1*</u>	Consent of Citrin Cooperman & Company, LLP							
<u>23.2*</u>	Consent of Freshfields Bruckhaus Deringer US LLP (included in Exhibit 5.1)							
<u>24.1*</u>	Power of Attorney (included as part of the signature pages to this Registration Statement)							
<u>99.1</u>	AeroClean Technologies, Inc. 2021 Incentive Award Plan (incorporated by reference to Exhibit 99.1 to the Registrant's Registration Statement on Form S-8 (File No. 333-261396) submitted to the Commission by the Registrant on November 29, 2021)							
<u>107*</u>	Filing Fee Table							

^{*} Filed herewith

SIGNATURES

The Registrant. Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Palm Beach Gardens, State of Florida on the 12th day of May, 2022.

AEROCLEAN TECHNOLOGIES, INC.

By: /s/ Jason DiBona

Name: Jason DiBona Title: Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints each of Jason DiBona and Ryan Tyler as such person's true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for such person and in such person's name, place and stead, in any and all capacities, to sign any and all amendments to the Registration Statement, including post-effective amendments, and registration statements filed pursuant to Rule 462 under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, and does hereby grant unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that each said attorney-in-fact and agent, or any substitute therefor, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities indicated on the 12th day of May, 2022:

Name	Title					
By:/s/ Jason DiBona Jason DiBona	Chief Executive Officer (Principal Executive Officer)					
By:/s/ Ryan Tyler Ryan Tyler	Chief Financial Officer (Principal Financial and Accounting Officer)					
By:/s/ Amin J. Khoury Amin J. Khoury, PhD (Hon)	Chairman of the Board					
By:/s/ David Helfet David Helfet, M.D.	Director					
By:/s/ Michael Senft Michael Senft	Director					
By:/s/ Thomas P. McCaffrey Thomas P. McCaffrey	Director					
By:/s/ Heather Floyd Heather Floyd	Director					

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AeroClean Technologies, Inc. 10455 Riverside Drive Palm Beach Gardens, FL 33410

May 12, 2022

Ladies and Gentlemen:

We are acting as counsel to AeroClean Technologies, Inc., a Delaware corporation (the *Company*), in connection with the preparation and filing with the Securities and Exchange Commission (the *Commission*) of a registration statement on Form S-8 (as amended from time to time, the Registration Statement), under the Securities Act of 1933, as amended (the *Securities Act*), relating to 277,552 shares of common stock, par value \$0.01 per share, of the Company (the *Shares*), issuable pursuant to the AeroClean Technologies, Inc. 2021 Incentive Award Plan (the *Plan*).

This opinion is confined to the General Corporation Law of the State of Delaware, as currently in effect. Accordingly, we express no opinion herein with regard to any other laws. The opinion expressed herein is limited to the matters stated herein, and no opinion is implied or may be inferred beyond the matters expressly stated herein. We do not undertake to advise you of changes in law or facts that may come to our attention after the date of this letter.

We have examined and have relied as to matters of fact upon such corporate and other records, agreements, documents and other instruments and certificates or comparable documents of public officials and of officers and representatives of the Company and such other persons, and we have made such other investigations, as we have deemed relevant and necessary as a basis for the opinion expressed below.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals and the conformity with authentic originals of all documents submitted to us as copies. As to any facts material to the opinion expressed herein that we did not independently establish or verify, we have relied, without independent verification, upon oral or written statements and representations of public officials, officers and other representatives of the Company. We have also assumed the due authorization, execution and delivery of all documents by all persons other than the Company where due authorization, execution and delivery are prerequisites to the effectiveness thereof. We have also assumed that the individual grants or awards under the Plan have been duly authorized by all necessary corporate action and duly granted or awarded and exercised in accordance with the requirements of law and the Plan (and the agreements and awards duly adopted hereunder and in accordance therewith).

Based upon the foregoing, and subject to limitations, qualifications and assumptions set forth herein, we are of the opinion that the Shares have been authorized by the Company and, when the Shares are issued by the Company in accordance with the terms of the Plan and the applicable award agreements pursuant to which the awards related to the Shares are made, the Shares will be validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion with the Commission as Exhibit 5.1 to the Registration Statement. In giving this consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act.

Sincerely yours,

/s/ Freshfields Bruckhaus Deringer US LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement of AeroClean Technologies, Inc. (the "Company") on Form S-8 of our report dated April 1, 2022, relating to the financial statements of the Company included in the Annual Report on Form 10-K for the year ended December 31, 2021.

/s/ CITRIN COOPERMAN & COMPANY, LLP

New York, New York

May 12, 2022

Calculation of Filing Fee Table

Form S-8

(Form Type)

<u>AeroClean Technologies, Inc.</u>

(Exact name of Registrant as Specified in its Charter)

Type 1—Newly Registered Securities

Security Type	Security Class Title Common Stock, \$0.01 par value per share, reserved for issuance pursuant to the AeroClean Technologies, Inc. 2021 Incentive	Fee Calculation Rule Other ⁽²⁾	Amount Registered ⁽¹⁾	Proposed Maximum Offering Price per Unit	Maximum Aggregate <u>offering Price</u>	Fee Rate	mount of gistration Fee
Equity	Award Plan	Otner(=)	277,552 ⁽³⁾	\$ 2.42 ⁽²⁾	\$ 671,675.84	0.0000927	\$ 62.26
Total Offering Amounts					\$ 671,675.84	0.0000927	\$ 62.26
Total Fee Offsets ⁽⁴⁾							 _
Net Fee Due							\$ 62.26

(1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of common stock, par value \$0.01 per share (the "Common Stock"), of AeroClean Technologies, Inc. (the "Registrant") that become issuable under the AeroClean Technologies, Inc. 2021 Incentive Award Plan (the "Incentive Award Plan") set forth herein as a result of any stock dividend, stock split, recapitalization, or other similar transaction effected without the receipt of consideration that results in an increase to the number of outstanding shares of Common Stock, as applicable.

- (2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) and (h) under the Securities Act and based upon the average of the high and low prices of the Common Stock as reported on the Nasdaq Capital Market on May 10, 2022.
- (3) Represents shares of Common Stock that were automatically added to the shares reserved for issuance under the Incentive Award Plan on January 1, 2022 pursuant to an "evergreen" provision contained in the Incentive Award Plan. Pursuant to such provision, the number of shares of Common Stock reserved for issuance under the Incentive Award Plan automatically increases on the first day of each fiscal year of the Registrant during the term of the Incentive Award Plan by a number equal to the lesser of (a) 2% of the total number of shares of Common Stock actually issued and outstanding on the last day of the immediately preceding prior fiscal year or (b) a number of shares of Common Stock determined by the Registrant's board of directors.

(4) The Registrant does not have any fee offsets.