

As filed with the Securities and Exchange Commission on September 1, 2023.

Registration No. 333-

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

FORM S-1

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

Molekule Group, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

3841
(Primary Standard Industrial
Classification Code Number)

45-3213164
(I.R.S. Employer
Identification Number)

**10455 Riverside Drive
Palm Beach Gardens, FL 33410
Telephone: (833) 652-5326**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this Form are offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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 to Section 7(a)(2)(B) of the Securities Act.

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a), may determine.

PRELIMINARY PROSPECTUS, SUBJECT TO COMPLETION, DATED SEPTEMBER 1, 2023

MOLEKULE

Subscription Rights to Purchase up to 10,000 Units Consisting of up to 10,000 Shares of Convertible Preferred Stock and Warrants to Purchase up to Shares of Common Stock at a Subscription Price of \$1,000 per Unit

(and up to shares of Common Stock underlying such Convertible Preferred Stock and Warrants)

Molekule Group, Inc. (the “Company,” “we,” “us” and “our”) is distributing to holders of the Company’s common stock, \$0.01 par value (“common stock”), as well as the holder of our outstanding pre-funded warrant issued in May 2023 that is entitled to participate in this offering pursuant to the terms thereof (the “Participating Warrant”), at no charge, non-transferable subscription rights to purchase up to 10,000 units (“Units”). Each Unit consists of one (1) share of our convertible preferred stock (the “preferred stock”) with a stated value of \$1,000 per share of preferred stock (the “stated value”) and a warrant to purchase shares of our common stock at an exercise price of \$ per share from the date of issuance through its expiration five years from the date of issuance (the “warrants”). Each share of preferred stock is convertible at the option of the holder at any time into a number of shares of our common stock determined by dividing (i) the stated value of the preferred stock *plus* any accrued and accumulated dividends by (ii) the conversion price (\$ per share, subject to adjustment). We may redeem the preferred stock, in whole or in part on a pro rata basis, at any time in our sole discretion by paying to the holders thereof in cash an amount equal to the liquidation preference (including any accrued and accumulated dividends) in effect at the time of redemption.

We refer to the offering that is the subject of this prospectus as the “rights offering.” In the rights offering, you will receive one (1) subscription right for every share of common stock owned or deemed to be owned (in the case of the Participating Warrant) as of 4:00 p.m., Eastern Time, on , 2023, the record date of the rights offering (the “Record Date”). The preferred stock and warrants comprising the Units will separate upon the closing of this rights offering and will be issued separately; however, they may only be purchased as a Unit and the Unit will not trade as a separate security. The subscription rights will not be tradeable. We must sell a sufficient number of Units to generate gross proceeds of at least \$10 million in order to complete the rights offering (which condition may be waived by our board of directors in its sole discretion).

Each subscription right consists of a basic subscription right and an over-subscription privilege.

Each subscription right will entitle you to purchase one Unit, which we refer to as the “basic subscription right,” at a subscription price equal to \$1,000 per Unit (the “subscription price”), subject to proration among participants exercising their basic subscription right. If you exercise your basic subscription right in full, and any portion of the Units remain available under the rights offering which are unsubscribed, you will be entitled to an over-subscription privilege to purchase unsubscribed Units at the subscription price, subject to proration among participants exercising their over-subscription privilege to the extent there is an insufficient number of unsubscribed Units to accommodate all over-subscription privileges so exercised, which we refer to as the “over-subscription privilege.”

The subscription rights will expire if they are not exercised by 5:00 p.m., Eastern Time, on , 2023, unless the rights offering is extended or earlier terminated by us. If we elect to extend the rights offering, we will issue a press release announcing the extension no later than 9:00 a.m., Eastern time, on the next business day after the most recently announced expiration date of the rights offering. We may extend the rights offering for additional periods, not to exceed 45 days, in our sole discretion. Once made, all exercises of subscription rights are irrevocable. All subscription payments will be deposited into an escrow account maintained by the subscription agent (as defined below) for the benefit of the holders exercising their subscriptions under the rights offering, and if the rights offering is not completed for any reason all funds will be promptly returned, without interest, to such subscribers in the amounts advanced in connection with their respective exercises.

Amin J. Khoury, the Chairman of our board of directors and one of our co-founders, and Foundry Group Next, L.P., which is affiliated with our director Brad Feld, have informed us of their interest in participating in the rights offering; however, there can be no assurance as to what extent they will participate, if at all.

We have not entered into any standby purchase agreement or other similar arrangement in connection with this rights offering. The rights offering is being conducted on a best-efforts basis. We have also engaged Computershare

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Trust Company, N.A. (“Computershare”) to serve as our subscription agent for the rights offering (the “subscription agent”) and Georgeson LLC (“Georgeson”) to serve as our information agent for the rights offering (the “information agent”). The subscription agent will hold the funds we receive from subscribers until we complete or cancel this rights offering. If you want to participate in this rights offering and you are a record holder of our common stock, we recommend that you submit your subscription documents to the subscription agent well before the deadline. If you want to participate in this rights offering and you hold our common stock through your broker, dealer, bank or other nominee, you should promptly contact your broker, dealer, bank or other nominee and submit your subscription documents in accordance with the instructions and within the time period provided by your broker, dealer, bank or other nominee. For a detailed discussion, see *“Rights Offering — The Subscription Rights.”*

We are conducting the rights offering to raise capital that we intend to use for working capital and for general corporate purposes. Our obligation to close the rights offering and to distribute the subscription rights is conditioned upon the satisfaction, or waiver by our board of directors, of certain conditions, including the restructuring of our outstanding indebtedness. See *“Summary of the Rights Offering — Extension, Amendment, Termination and Conditions.”*

If we fail to consummate this rights offering or obtain funds from other sources in the third quarter of 2023, we will not be able to continue as a going concern and will need to explore restructuring and reorganization initiatives. See *“Risk Factors — Risks Related to this Rights Offering, the Preferred Stock, the Warrants and Our Common Stock — If the rights offering is not consummated or we are not able to obtain alternative financing in the third quarter of 2023, we will not have funds to meet our working capital requirements and to satisfy our repayment obligations under our debt agreements”* and *“Risk Factors — Risks Related to this Rights Offering, the Preferred Stock, the Warrants and Our Common Stock — Even if the rights offering is completed, we will require additional capital to fund our operations, and if we fail to obtain financing when needed or on acceptable terms, we will not be able to meet our working capital requirements or fund business operations.”*

You should carefully consider whether to exercise your subscription rights prior to the expiration of the rights offering. All exercises of subscription rights are irrevocable, even if the rights offering is extended by our board of directors for additional periods (not to exceed 45 days).

All subscription payments will be deposited into an account maintained by the subscription agent for the benefit of the holders exercising their subscriptions under this rights offering, and if this rights offering is not completed for any reason all funds will be promptly returned to such subscribers in the amounts advanced in connection with their respective exercises.

If we amend the rights offering to allow for an extension of the rights offering for additional periods aggregating to more than 45 days, or make a fundamental change to the terms of the rights offering set forth in this prospectus, you may cancel your subscription and receive a prompt refund of any money you have advanced. We may cancel the rights offering at any time prior to the expiration of the rights offering for any reason. In the event the rights offering is canceled, all subscription payments received by the subscription agent will be promptly returned, without interest.

Our board of directors is making no recommendation regarding your exercise of the subscription rights. The subscription rights may not be sold, transferred or assigned and will not be listed for trading on any stock exchange or market. Our common stock is listed on the Nasdaq Capital Market under the symbol “MKUL.” On August 31, 2023, the last reported sale price of our common stock on the Nasdaq Capital Market was \$0.93 per share. You are urged to obtain current market quotations for our common stock. We do not intend to apply for listing of the preferred stock or the warrants on any securities exchange or recognized trading system.

You should read this prospectus and any prospectus supplement, together with additional information described under the headings “Incorporation of Certain Documents by Reference” and “Where You Can Find More Information,” carefully before you invest in any of our securities.

Investing in our securities involves a high degree of risk. See “Risk Factors” on page 21 of this prospectus and similarly titled sections of the documents incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2023

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You should read this prospectus, including all documents incorporated herein by reference, together with the additional information described under “*Where You Can Find More Information.*”

You may obtain the information incorporated by reference without charge by following the instructions under “*Where You Can Find More Information.*”

ABOUT THIS PROSPECTUS

You should rely only on the information we have provided or incorporated by reference into this prospectus. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus in connection with the rights offering described herein. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, or any document incorporated by reference, is accurate only as of the date of the applicable documents, regardless of the time of delivery of this prospectus or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since that date.

The distribution of this prospectus and the issuance of the securities in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the sale of the securities and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, the securities offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled “Where You Can Find More Information.”

Unless the context otherwise requires, references in this prospectus to “Molekule,” “the Company,” “we,” “us” and “our” refer to Molekule Group, Inc. and our subsidiaries.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The Private Securities Litigation Reform Act of 1995 provides a “safe harbor” for forward-looking statements to encourage companies to provide prospective information to investors. This prospectus and the documents incorporated by reference herein include forward-looking statements that reflect our current expectations and projections about our future results, performance and prospects. Forward-looking statements include all statements that are not historical in nature or are not current facts. When used in this prospectus, the words “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “likely,” “may,” “might,” “plan,” “possible,” “potential,” “predict,” “project,” “should,” “target,” “will,” “would” or the negative of these terms or similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on our current expectations and assumptions about future events and are based on currently available information as to the outcome and timing of future events.

These forward-looking statements are subject to a number of risks, uncertainties, assumptions and other factors that could cause our actual results, performance and prospects to differ materially from those expressed in, or implied by, these forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed under the heading “Risk Factors” in this prospectus and under similar headings in the documents incorporated by reference herein, including the following factors:

- if the rights offering is not consummated or we are not able to obtain alternative financing in the third quarter of 2023, we will not have funds to meet our working capital requirements and to satisfy our repayment obligations under our debt agreements;
- the outcome of negotiations regarding the termination of certain product supply arrangements with several contract manufacturers;
- general economic conditions in the markets where we operate;
- the impact of the COVID-19 pandemic and related prophylactic measures;
- expected timing of regulatory approvals and product launches;
- non-performance of third-party vendors and contractors;
- risks related to our ability to successfully sell our products and the market reception to and performance of our products, including our new Molekule 360 indoor air quality management solutions;
- the possibility that our products do not ultimately perform in line with our testing or that prior test results may not be replicated in future studies;
- our compliance with, and changes to, applicable laws and regulations;
- our limited operating history;
- our ability to manage growth;
- our ability to successfully restructure certain of our debt agreements;
- our ability to obtain additional financing;
- the consummation of this rights offering;
- our ability to expand product offerings;
- our ability to compete with others in our industry;
- our ability to protect our intellectual property;
- the ability of certain stockholders to determine the outcome of matters that require stockholder approval;
- our ability to retain the listing of our common stock on Nasdaq;
- our ability to defend against legal proceedings;

- success in retaining or recruiting, or changes required in, our officers, key employees or directors;
- our ability to achieve the expected benefits from our merger with Molekule, Inc.;
- our ability to successfully integrate Molekule, Inc.;
- the incurrence of unexpected costs, liabilities or delays relating to our merger with Molekule, Inc.;
- the risk that goodwill or identifiable intangible (including such items recorded with respect to our merger with Molekule, Inc.) assets could become impaired;
- our ability to successfully consummate acquisitions;
- our ability to comply or regain compliance with Nasdaq Capital Market continued listing standards; and
- other risk factors set forth in this prospectus and detailed in our most recent Annual Report on Form 10-K and our other Securities and Exchange Commission (“SEC”) filings.

In light of these risks, uncertainties and assumptions, you are cautioned not to put undue reliance on any forward-looking statements in this prospectus or the documents incorporated by reference herein. These statements should be considered only after carefully reading this entire prospectus. Except as required under the federal securities laws and rules and regulations of the SEC, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Additional risks that we may currently deem immaterial or that are not presently known to us could also cause the forward-looking events discussed in this prospectus not to occur.

SUMMARY OF THE RIGHTS OFFERING

The following summary describes the principal terms of the rights offering, but is not intended to be complete. See the information under the heading “Rights Offering” in this prospectus for a more detailed description of the terms and conditions of the rights offering.

Securities Offered

We are distributing, at no charge, to holders of our common stock and the Participating Warrant, non-transferrable subscription rights to purchase up to 10,000 Units at a subscription price of \$1,000 per Unit. Each of such eligible holders will receive one (1) subscription right for each share of common stock owned or deemed to be owned (in the case of the Participating Warrant) as of 4:00 p.m., Eastern Time, on _____, 2023. Each Unit consists of (i) one share of preferred stock and (ii) a warrant to purchase _____ shares of our common stock. The Units will separate upon the closing of the rights offering and will be issued separately; however, they may only be purchased as a Unit and the Unit will not trade as a separate security.

Amin J. Khoury, the Chairman of our board of directors and one of our co-founders, and Foundry Group Next, L.P., which is affiliated with our director Brad Feld, have informed us of their interest in participating in the rights offering; however, there can be no assurance as to what extent they will participate, if at all.

Preferred Stock

Each share of preferred stock will be convertible at the option of the holder, at any time, into the number of shares of our common stock determined by dividing (i) the \$1,000 stated value per share of the preferred stock *plus* any accrued and accumulated dividends by (ii) the conversion price of \$ _____, subject to adjustment.

On an annual basis, our board of directors may, at its sole discretion, cause a dividend with respect to the preferred shares to be paid in cash in an amount equal to 12% of the liquidation preference as in effect at such time (initially, \$1,000 per share). If the dividend is not so declared and paid in cash, the liquidation preference will be adjusted and increased annually by an amount equal to 12% of the liquidation preference as in effect at such time.

We may redeem the preferred stock, in whole or in part on a pro rata basis, at any time in our sole discretion by paying to the holders thereof in cash an amount equal to the liquidation preference (including any accrued and accumulated dividends) in effect at the time of redemption.

The preferred stock will rank senior to our common stock and any other class of capital stock we issue in the future with respect to dividend rights and distribution rights upon our liquidation, winding-up or dissolution or upon certain Deemed Liquidation Events (as defined in the form of certificate of designation relating to the preferred stock attached hereto as Exhibit 3.2, the “Certificate of Designation”). See “*Description of Capital Stock — Preferred Stock Included in the Units Issuable in Rights Offering*” for more information.

Warrants

Each warrant entitles the holder to purchase _____ shares of common stock at an exercise price of \$ _____ per share, subject to adjustment. The warrants will be immediately exercisable and will expire five years from the date of issuance. The warrants will be exercisable for cash or, solely during any period when there is no effective registration statement registering the shares issuable upon exercise of the warrants, holders may exercise their warrants on a cashless basis. See “*Description of Capital Stock — Warrants Included in Units Issuable in Rights Offering*” for more information.

Basic Subscription Right

The basic subscription right will entitle you to purchase one (1) Unit at a subscription price of \$1,000 per Unit. You may exercise your basic subscription right for some or all of your subscription rights, or you

may choose not to exercise your subscription rights. If you choose to exercise your subscription rights, there is no minimum number of Units you must purchase. We are distributing basic subscription rights to purchase an aggregate of 36,959,459 Units, but are only selling 10,000 Units in the rights offering. In the event that the rights offering is over-subscribed, rights holders will be entitled to their pro rata portion of the Units.

Over-Subscription Privilege

If you fully exercise your basic subscription right, you may also choose to exercise an over-subscription privilege to purchase additional Units in the offering. You will only be able to actually purchase additional Units pursuant to your over-subscription privilege if other eligible holders do not fully exercise their basic subscription rights and there are Units that remain unsubscribed at the expiration of the rights offering. In the event that holders exercise their over-subscription privilege such that the rights offering is over-subscribed, rights holders that have elected to exercise their over-subscription privilege will be entitled to their pro rata portion of the remaining Units. See “*Rights Offering — Over-Subscription Privilege*” for more information.

Limitation of the Purchase of Units

To protect our ability to use our net operating losses and other tax benefits to offset potential future income taxes for federal income tax purposes, we reserve the right, in our sole discretion, to limit the number of Units any person or entity, together with related persons or entities, may purchase pursuant to the exercise of basic or over-subscription privileges, where such purchase, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning 4.99% or more of our issued and outstanding shares of common stock following the closing of the rights offering unless such person or entity has obtained a prior waiver from our board of directors to acquire, own or control such shares of common stock. Amin J. Khoury and Foundry Group Next, L.P. have both obtained this waiver from our board of directors. Our board of directors may grant waivers to other major shareholders that currently own more than 4.99% of our outstanding shares of common stock. It is possible that the issuance of any units to any such persons or entities, or the exercise of warrants included as part of the units by any such persons or entities, may result in the Company being subject to a present or future “ownership change” within the meaning of Section 382 of the Internal Revenue Code (the “Code”), which may significantly limit the amount of net operating losses (“NOLs”) and credits we could utilize to offset our taxable income in any single year.

Record Date

, 2023.

Expiration Date of the Rights Offering

5:00 p.m., Eastern Time, on , 2023, unless extended for additional periods (not to exceed 45 days) in our sole discretion.

Subscription Price

\$1,000 per Unit, payable in cash. To be effective, any payment related to the exercise of a right must clear prior to the expiration date of the rights offering.

Procedure for Exercising Subscription Rights

To exercise your subscription rights, you must take the following steps:

- If you are a record holder, as of the Record Date, of our common stock or the Participating Warrant, you must deliver payment and a properly completed subscription rights certificate to the subscription agent to be received before 5:00 p.m., Eastern Time, on , 2023. You may deliver the documents and payments by first class mail or courier service. If you use first class mail for this purpose, we recommend using registered mail, properly insured, with return receipt requested.

- If as of the Record Date you are a beneficial owner of shares of our common stock that are registered in the name of a broker, dealer, bank or other nominee, you should instruct your broker, dealer, bank or other nominee to exercise your subscription rights on your behalf. Please follow the instructions of your nominee, who may require that you meet a deadline earlier than 5:00 p.m., Eastern Time, on _____, 2023.

See the section titled “*Rights Offering*” for more information.

Payment Adjustments

If you send a payment that is insufficient to purchase the number of Units requested, or if the number of Units requested is not specified in the subscription rights certificate, the payment received will be applied to exercise subscription rights to the extent of the payment. If the payment exceeds the amount necessary for the full exercise of your subscription rights, including any over-subscription privilege exercised and permitted, the excess will be returned to you promptly in cash. You will not receive interest or a deduction on any payments refunded to you under the rights offering.

Delivery of Securities

As soon as practicable after the expiration of the rights offering, payment for the Units subscribed for has cleared, and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected, we expect to close on subscriptions and for the subscription agent to arrange for the issuance of the shares of preferred stock and warrants purchased pursuant to the rights offering. All shares of preferred stock and warrants that are purchased in the rights offering will be issued in book-entry, or uncertificated, form, meaning that you will receive a direct registration account statement (a “DRS”) from our transfer agent reflecting ownership of these securities if you are a holder of record. If you currently hold your securities in the name of a bank, broker, dealer, or other nominee, the Depository Trust Company (“DTC”) will credit your account with your nominee with the securities you purchased in the rights offering.

No Revocation

Except as described below, all exercises of subscription rights are irrevocable, even if you later learn of information that you consider to be unfavorable to the exercise of your subscription rights.

Use of Proceeds

We are conducting the rights offering for funding working capital and for general corporate purposes. See “*Use of Proceeds*” for a more detailed description of the intended use of proceeds from the rights offering.

Non-Transferability of Rights

The subscription rights granted to you may be exercised only by you, and, therefore, you may not sell, transfer or assign your subscription rights to anyone else.

Extension, Amendment, Termination and Conditions

Although we do not presently intend to do so, we may extend the rights offering for additional time in our sole discretion for any reason for additional periods, not to exceed 45 days. For example, we may decide that changes in the market price of our common stock warrant an extension, or we may decide that the degree of stockholder participation in the rights offering is less than the level we desire. In the event that we decide to extend the rights offering and you have already exercised your subscription rights, your subscription payment will remain with the subscription agent until such time as the rights offering closes or is terminated. We also reserve the right to amend or modify the terms of the rights offering, including increasing or decreasing the size of the rights offering, as appropriate.

Our board of directors may also for any reason decide to terminate the rights offering at any time before the expiration of the rights offering. The rights offering is subject to the following conditions unless waived by our board of directors:

- we receive minimum gross proceeds of at least \$10 million through the rights offering, such amount subject to increase by our board of directors;
- we reach an agreement with Silicon Valley Bank, a division of First-Citizens Bank & Trust Company (“SVB”), to restructure our indebtedness on terms acceptable to us; and
- we renegotiate or otherwise reach a settlement with respect to a legacy building lease on terms acceptable to us.

See “*Recent Developments*” for a description of recent developments related to these conditions.

In the event that the rights offering is cancelled, all subscription payments received by the subscription agent will be returned, without interest or deduction, as soon as practicable.

If we should make any fundamental changes to the terms set forth in this prospectus, we will (i) file a post-effective amendment to the registration statement of which this prospectus forms a part, (ii) offer potential purchasers who have subscribed for Units the opportunity to cancel such subscriptions and issue a refund of any money advanced by such stockholder or eligible warrant holder (without interest or deduction), and (iii) recirculate an updated prospectus after the post-effective amendment is declared effective with the SEC.

Subscription Agent and Information Agent

Computershare will serve as our subscription agent for the rights offering and Georgeson will serve as the information agent for the rights offering.

U.S. Federal Income Tax Considerations

Although the authorities governing transactions such as the rights offering are complex and unclear in certain respects, we believe and intend to take the position that the distribution of subscription rights to you with respect to your shares of our common stock should generally be treated, for U.S. federal income tax purposes, as a non-taxable distribution. See the section of this prospectus titled “*U.S. Federal Income Tax Considerations*” for more information. You should consult your tax advisor as to the particular consequences to you of the rights offering.

Shares To Be Outstanding Immediately After the Rights Offering

As of August 9, 2023, 34,654,459 shares of our common stock were issued and outstanding. Assuming no additional shares of capital stock are issued by us prior to the expiration of the rights offering, and assuming the rights offering is fully subscribed, we will have 34,654,459 shares of common stock, 10,000 shares of preferred stock, and warrants to purchase additional shares of our common stock issued and outstanding upon the consummation of the rights offering.

The number of shares of our common stock outstanding prior to and immediately after this rights offering, as set forth above, excludes the following potentially dilutive securities as of August 11, 2023:

- 13,180,000 shares of our common stock issuable upon the exercise of (i) a warrant to purchase up to 1,500,000 shares of our common stock at an exercise price of \$2.00 per share, initially issued on June 29, 2022 (the “2022 Warrant”), (ii) a series A warrant to purchase up to 3,125,000 shares of our common stock at an exercise price of \$1.60, issued on May 5, 2023 (the “Series A Warrant”), (iii) a series B warrant to purchase up to 6,250,000 shares of our common stock at an exercise price of \$1.84, issued on May 5, 2023 (the “Series B Warrant”), and (iv) a pre-funded warrant to purchase up to 2,305,000 shares of our common stock (after giving effect to a partial exercise of such warrant) with a purchase price of \$1.59 and a nominal exercise price, issued on May 5, 2023 (the “Pre-Funded Warrant” or the “Participating Warrant”) and, collectively with the 2022 Warrant, the Series A Warrant and the Series B Warrant, the “PIPE Warrants”(the exercise price of the 2022 Warrant, the Series A Warrant and the Series B Warrant may need to be adjusted as a result of the issuance of the preferred stock and the warrants in the rights offering, depending on the final pricing terms); and
- 1,946,615 shares of our common stock that remain available for future issuance under our 2021 Incentive Award Plan, Director Deferred Compensation Plan and Employee Stock Purchase Plan.

Risk Factors

Investing in our securities involves a high degree of risk. You should carefully read and consider the information in this prospectus set forth under the heading “*Risk Factors*” and all other information set forth in this prospectus and the documents incorporated herein by reference before deciding to participate in the rights offering. In particular, there can be no assurance that this rights offering will be successful, that the Company could obtain funds from other sources, that the Company will reach an agreement with SVB to restructure its debt under the senior term loan and the mezzanine loan, on acceptable terms, that the Company will reach an agreement with its subsidiary’s landlord on acceptable terms, or that any cost-cutting measures of the Company will be sufficient to continue operations. If the Company cannot achieve any of the foregoing, the Company will not be able to continue as a going concern and will need to explore restructuring and reorganization initiatives.

Dividend Policy

We have not paid any cash dividends on our shares of common stock to date. The payment of cash dividends in the future will be dependent upon our revenues and earnings, if any, capital requirements and general financial condition and will be declared at the discretion of our board of directors. It is the current intention of our board of directors to retain all earnings, if any, for use in our business operations and, accordingly, our board of directors does not anticipate declaring any dividends on our shares of common stock in the foreseeable future.

The terms of the preferred stock being offered hereby as part of the Units include a 12% dividend which, if not declared by our board of directors and paid in cash to the holders of the preferred stock, will accrue and accumulate to the liquidation preference of the preferred stock. The terms of the preferred stock provide that cash dividends on such shares will be entitled to be paid prior to any cash dividend paid to the holders of our common stock.

Market for our Common Stock

Our common stock is listed on the Nasdaq Capital Market under the symbol “MKUL.”

Market for Preferred Stock and Warrants

There is no established trading market for the preferred stock and for the warrants, and we do not expect a market to develop for such securities. We do not intend to apply for listing of the preferred stock or the warrants on any securities exchange or recognized trading system.

Warrant Agent, Transfer Agent and Registrar

Computershare Trust Company, N.A.

Questions

If you have any questions about the rights offering, please contact the information agent, Georgeson, at 1290 Avenue of the Americas, 9th Floor, New York, NY 10104 or at the telephone number 888-607-6511.

QUESTIONS AND ANSWERS ABOUT THE RIGHTS OFFERING

The following are examples of what we anticipate may be common questions about the rights offering. The answers are based on selected information included elsewhere in this prospectus or the documents incorporated by reference herein. The following questions and answers do not contain all of the information that may be important to you and may not address all of the questions that you may have about the rights offering. This prospectus and the documents incorporated by reference into this prospectus contain more detailed descriptions of the terms and conditions of the rights offering and provide additional information about us and our business, including potential risks related to the rights offering, the securities offered hereby, and our business. We urge you to read this entire prospectus and the documents incorporated by reference into this prospectus.

Why are we conducting the rights offering?

We are conducting the offering to raise capital that we need for working capital and general corporate purposes to continue operations

What is the rights offering?

We are distributing to holders of our common stock and the Participating Warrant, at no charge, non-transferable subscription rights to purchase Units. On the Record Date, _____, 2023, you will receive one (1) subscription right for each whole share of common stock that you own, or that is issuable upon exercise of the Participating Warrant, as of 4:00 p.m., Eastern Time, on _____, 2023. Each subscription right will entitle the holder to a basic subscription right and an over-subscription privilege.

What is a Unit?

Each Unit consists of one (1) share of preferred stock and a warrant to purchase _____ shares of common stock and has a subscription price of \$1,000 per Unit. We do not intend to issue fractional Units. The shares of preferred stock and warrants that comprise each Unit are immediately separable and will be issued separately in this rights offering. However, they may only be purchased as a Unit, and the Units will not trade as a separate security.

What is the basic subscription right?

Each basic subscription right will entitle you to purchase one (1) Unit at the subscription price. For example, if you own 100 shares of common stock on the Record Date, you will receive 100 subscription rights to purchase 100 Units, comprised of an aggregate of 100 shares of our preferred stock and warrants to purchase _____ shares of our common stock for a total payment of \$100,000. You may exercise all or a portion of your basic subscription right or you may choose not to exercise any basic subscription right at all.

If you choose to exercise your subscription rights, there is no minimum number of Units you must purchase. We are distributing basic subscription rights to purchase an aggregate of 36,959,459 Units, but are only selling 10,000 Units in the rights offering. In the event that the rights offering is over-subscribed, rights holders will be entitled to their pro rata portion of the Units. If enough Units are available, we will seek to honor your basic subscription right in full. If basic subscription rights requests exceed the number of Units available, however, we will allocate the available Units pro rata among the rights holders exercising the basic subscription rights in proportion to the number of shares of our common stock each of those rights holders own or are deemed to own (in the case of the Participating Warrant) on the Record Date, relative to the number of shares owned or deemed to be owned on the Record Date by all rights holders exercising the basic subscription right. If this pro rata allocation results in any rights holders receiving a greater number of Units than the rights holder subscribed for pursuant to the exercise of the basic subscription right, then such record holder will be allocated only that number of Units for which the rights holder subscribed, and the remaining Units will be allocated among all other rights holders exercising the basic subscription right on the same pro rata basis described above. The proration process will be repeated until all Units have been allocated.

If you are a record holder of our common stock or the Participating Warrant, the number of Units you may purchase pursuant to your basic subscription right is indicated on the subscription rights certificate.

If you hold our common stock in the name of a broker, dealer, bank, or other nominee who uses the services of DTC you will not receive a subscription rights certificate. Instead, DTC will issue your subscription rights to your nominee record holder for each share of our common stock that you own as of the Record Date. If you are not contacted by your nominee, you should contact your nominee as soon as possible.

What is the over-subscription privilege?

If you exercise your basic subscription right in full, you may also choose to exercise your over-subscription privilege to purchase a portion of the Units that the other rights holders do not purchase through the exercise of their basic subscription right. You should indicate on your subscription rights certificate, or the form provided by your nominee if you hold our common stock in the name of a nominee, the number of additional Units you would like to apply to purchase pursuant to your over-subscription privilege.

If enough Units are available, we will seek to honor your over-subscription request in full. If over-subscription requests exceed the number of Units available, however, we will allocate the available Units pro rata among the rights holders exercising the over-subscription privilege in proportion to the number of shares of our common stock each of those rights holders own or are deemed to own (in the case of the Participating Warrant) on the Record Date, relative to the number of shares owned or deemed to be owned on the Record Date by all rights holders exercising the over-subscription privilege. If this pro-rata allocation results in any rights holders receiving a greater number of Units than the rights holder subscribed for pursuant to the exercise of the over-subscription privilege, then such rights holder will be allocated only that number of Units for which the rights holder subscribed, and the remaining Units will be allocated among all other rights holders exercising the over-subscription privilege on the same pro rata basis described above. The proration process will be repeated until all Units have been allocated.

To properly exercise your over-subscription privilege, you must deliver to the subscription agent the subscription payment related to your over-subscription privilege before the rights offering expires. See “*Rights Offering — Over-Subscription Privilege.*” To the extent you properly exercise your over-subscription privilege for a number of Units that exceeds the number of unsubscribed Units available to you, any excess subscription payments will be returned to you as soon as practicable after the expiration of the rights offering, without interest or deduction.

Our subscription agent for the rights offering will determine the over-subscription allocation based on the formula described above.

Are there any limits on the number of Units I may purchase in the rights offering or own as a result of the rights offering?

To protect our ability to use our net operating losses and other tax benefits to offset potential future income taxes for federal income tax purposes, we reserve the right, in our sole discretion, to limit the number of Units any person or entity, together with related persons or entities, may purchase pursuant to the exercise of basic or over-subscription privileges, where such purchase, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning 4.99% or more of our issued and outstanding shares of common stock following the closing of the rights offering unless such person or entity has obtained a prior waiver from our board of directors to acquire, own or control such shares of common stock. Amin J. Khoury and Foundry Group Next, L.P. have both obtained this waiver from our board of directors. Our board of directors may grant waivers to other major shareholders that currently own more than 4.99% of our outstanding shares of common stock. It is possible that the issuance of any units to any such persons or entities, or the exercise of the warrants issued as part of the units by any such persons or entities, may result in the Company being subject to a present or future “ownership change” within the meaning of Section 382 of the Code, which may significantly limit the amount of NOLs and credits we could utilize to offset our taxable income in any single year.

May the subscription rights that I exercise be reduced for any reason?

Yes. While we are distributing to holders of our common stock and the Participating Warrant one (1) subscription right for every share of common stock owned or deemed to be owned, or every share

of common stock issuable upon exercise of the Participating Warrant, on the Record Date, we are only seeking to raise \$10 million in gross proceeds in this rights offering. As a result, based on 34,654,459 shares of common stock outstanding and 2,305,000 shares of common stock issuable upon exercise of the Participating Warrant as of August 9, 2023, and assuming we do not issue additional shares of common stock, we would grant subscription rights to acquire 36,959,459 Units but will only accept subscriptions for 10,000 Units. Accordingly, enough Units may not be available to honor your subscription in full. If exercises of basic subscription rights exceed the number of Units available in the rights offering, we will allocate the available Units pro rata among the holders exercising the basic subscription rights in proportion to the number of shares of our common stock each of those holders owned or deemed to be owned on the Record Date, relative to the number of shares owned or deemed to be owned on the Record Date by all rights holders exercising the basic subscription right.

If this pro rata allocation results in any rights holders receiving a greater number of Units than the rights holder subscribed for pursuant to the exercise of the basic subscription rights, then such rights holder will be allocated only that number of Units for which the rights holder subscribed, and the remaining Units will be allocated among all other rights holders exercising their basic subscription rights on the same pro rata basis described above. The proration process will be repeated until all Units have been allocated. Please also see the discussion under “*Rights Offering — Over-Subscription Privilege*” for a description of potential proration as to the over-subscription privilege.

We may, in the sole discretion of our board of directors, increase the amount of gross proceeds to be raised in the rights offering by up to 20% and accordingly increase the amount of Units issuable in the rights offering, which could result in gross proceeds of up to \$12 million.

If for any reason the number of Units allocated to you is less than you have subscribed for, then the excess funds held by the subscription agent on your behalf will be returned to you, without interest, as soon as practicable after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected, and we will have no further obligations to you.

What are the terms of the preferred stock?

Each share of preferred stock will be convertible at the option of the holder, at any time, into the number of shares of our common stock determined by dividing (i) the \$1,000 stated value per share of the preferred stock plus any accrued and accumulated dividends by (ii) the conversion price of \$ _____, subject to adjustment.

On an annual basis, our board of directors may, at its sole discretion, cause a dividend with respect to the preferred shares to be paid in cash in an amount equal to 12% of the liquidation preference as in effect at such time (initially, \$1,000 per share). If the dividend is not so declared and paid in cash, the liquidation preference will be adjusted and increased annually by an amount equal to 12% of the liquidation preference as in effect at such time.

We may redeem the preferred stock, in whole or in part on a pro rata basis, at any time in our sole discretion by paying to the holders thereof in cash an amount equal to the liquidation preference (including any accrued and accumulated dividends) in effect at the time of redemption. The preferred stock will rank senior, with respect to dividend rights, to our common stock and any other class of capital stock we issue in the future. See “*Description of Capital Stock — Preferred Stock Included in the Units Issuable in Rights Offering*” for more information.

Does the preferred stock have a liquidation preference over the common stock?

Yes, the preferred stock will rank senior to our common stock and any other class of capital stock we issue in the future with respect to distribution rights upon our liquidation, winding-up or dissolution or in the case of certain Deemed Liquidation Events (as defined in the Certificate of Designation). In any such event, the holders of preferred stock will be entitled to be paid, as applicable, out of the assets of the Company available for distribution to its stockholders or out of the consideration received by the Company for a Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by our board of directors), before any payment may be made to holders

of our common stock by reason of their ownership thereof, an amount per share equal to the liquidation preference (including any accrued and accumulated dividends) in effect at that time. See “*Description of Capital Stock — Preferred Stock Included in the Units Issuable in Rights Offering*” for more information.

What are the terms of the warrants?

Each warrant entitles the holder to purchase _____ shares of common stock at an exercise price of \$ _____ per share, subject to adjustment. The warrants will be immediately exercisable and will expire five years from the date of issuance. The warrants will be exercisable for cash or, solely during any period when there is no effective registration statement registering the shares issuable upon exercise of the warrants, holders may exercise their warrants on a cashless basis. See “*Description of Capital Stock — Warrants Included in Units Issuable in Rights Offering*” for more information.

Are the shares of preferred stock or warrants listed?

There is no public trading market for the preferred stock or warrants and we do not expect that they will be listed for trading on the Nasdaq Capital Market or any other securities exchange or recognized trading system. The warrants will be issued in registered form under a warrant agent agreement with Computershare, as warrant agent.

Will fractional Units be issued upon exercise of subscription rights, or fractional shares of common stock be issued upon the conversion of the preferred stock or the exercise of warrants?

We do not intend to issue fractional Units, fractional shares of preferred stock or fractional shares of common stock upon conversion of the preferred stock or exercise of warrants issued in the rights offering.

In addition, no fractional shares of common stock will be issued as a result of the conversion of the preferred stock or the exercise of warrants. Instead, for any such fractional share of common stock that would otherwise have been issuable upon conversion of shares of preferred stock, we may, at our election, pay a cash payment equal to such fraction multiplied by the conversion price or round up to the next whole share, and for any such fractional share of common stock that would have otherwise been issued upon exercise of warrants, we will round up such fraction to the next whole share.

What effect will the rights offering have on our outstanding common stock?

On August 9, 2023, 34,654,459 shares of our common stock were outstanding. Assuming no additional shares of common stock are issued by us prior to the expiration of the rights offering, and assuming this rights offering is fully subscribed for gross proceeds of \$10 million, approximately 34,654,459 shares of our common stock will be issued and outstanding, 10,000 shares of preferred stock will be issued and outstanding and convertible into an aggregate of _____ shares of our common stock (subject to adjustment), warrants to purchase an additional _____ shares of our common stock (subject to adjustment) will be outstanding and the PIPE Warrants to purchase 13,180,000 shares of our common stock will be outstanding. The exact number of shares of preferred stock and warrants that we will issue in this rights offering will depend on the number of Units that are subscribed for in the rights offering. See the section of this prospectus titled “*Dilution*” for more information.

How was the subscription price formula determined?

Our board of directors determined the subscription price taking into consideration, among other things, the following factors:

- the current and historical trading prices of our common stock on the Nasdaq Capital Market;
- the price at which stockholders might be willing to participate in the rights offering;
- the value of the common stock issuable upon conversion of the preferred stock being issued as a component of the Unit;
- the value of the warrant being issued as a component of the Unit;

- our need for additional capital and liquidity;
- the cost of capital from other sources; and
- comparable precedent transactions, including the percentage of shares offered, the terms of the subscription rights being offered, the subscription price and the discount that the subscription price represented to the immediately prevailing closing prices for those offerings.

In conjunction with the review of these factors, our board of directors reviewed our history and prospects, including our past and present earnings and cash requirements, our prospects for the future, the outlook for our industry and our current financial condition. Our board of directors believes that the subscription price should be designed to provide an incentive to our current stockholders to participate in the rights offering and exercise their basic subscription right and their over-subscription privilege.

The subscription price does not necessarily bear any relationship to any established criteria for value. You should not consider the subscription price as an indication of actual value of the Company or our common stock. We cannot assure you that the market price of our common stock will not decline during or after the rights offering. You should obtain a current price quote for our common stock and perform an independent assessment of our preferred stock and warrants before exercising your subscription rights and make your own assessment of our business and financial condition, our prospects for the future, and the terms of this rights offering. Once made, all exercises of subscription rights are irrevocable.

Am I required to exercise all of the basic subscription right I receive in the rights offering?

No. You may exercise any number of your basic subscription rights, or you may choose not to exercise any basic subscription right. If you do not exercise any basic subscription right, the number of shares of our common stock you own will not change. However, if you choose not to exercise your basic subscription right in full, your proportionate ownership interest in the Company may decrease. See the section of this prospectus titled “*Dilution*” for more information. If you do not exercise your basic subscription right in full, you will not be entitled to exercise your over-subscription privilege.

How soon must I act to exercise my subscription rights?

If you received a subscription rights certificate and elect to exercise any or all of your subscription rights, the subscription agent must receive your completed and signed subscription rights certificate and payment for both your basic subscription right and any over-subscription privilege you elect to exercise before the rights offering expires on _____, 2023, at 5:00 p.m. Eastern Time. If you hold your common stock in the name of a broker, dealer, custodian bank, or other nominee, your nominee may establish a deadline before the expiration of the rights offering by which you must provide it with your instructions to exercise your subscription rights, along with the required subscription payment.

May I transfer my subscription rights?

No. The subscription rights may be exercised only by the eligible holders of our common stock and Participating Warrant to whom they are distributed, and they may not be sold, transferred, assigned or given away to anyone else, other than by operation of law. As a result, a subscription rights certificate may be completed only by the recipient of the subscription rights certificate. The subscription rights will not be listed for trading on any stock exchange or market.

Is the Company requiring a minimum subscription amount to complete the rights offering?

There is no minimum subscription amount from any individual holder of rights in order to participate in the rights offering. However, as a condition to closing, which may be waived by the Company’s board of directors in its discretion, the Company is requiring a minimum subscription amount of \$10 million in the aggregate in order to complete the rights offering.

Is there any back-stop or standby purchase commitment in place to purchase Units that are not subscribed for in the rights offering?

No, there is no back-stop or standby purchase commitment in place to purchase Units that are not subscribed for in the rights offering.

What are the benefits of the rights offering?

The net proceeds obtained from the rights offering, assuming it is successfully consummated, in conjunction with the restructuring of our outstanding indebtedness, will enable us to restructure our capital structure and position us to execute on our business plan and continue operations. In addition, the capital raised through the rights offering may facilitate our ability to pursue strategic alternatives, including a potential sale of the Company. Some of the net proceeds may also be used to manage and help alleviate costs associated with developing our products and services, conducting research and development and funding operations. See *“Use of Proceeds.”*

See *“Risk Factors — Risks Related to this Rights Offering, the Preferred Stock, the Warrants and Our Common Stock — If the rights offering is not consummated or we are not able to obtain alternative financing in the third quarter of 2023, we will not have funds to meet our working capital requirements and to satisfy our repayment obligations under our debt agreements”* and *“Risk Factors — Risks Related to this Rights Offering, the Preferred Stock, the Warrants and Our Common Stock — Even if the rights offering is completed, we will require additional capital to fund our operations, and if we fail to obtain financing when needed or on acceptable terms, we will not be able to meet our working capital requirements or fund business operations.”*

Is the rights offering subject to any conditions?

We may terminate the rights offering at any time and for any reason prior to the completion of the rights offering. If we terminate the rights offering, we will issue a press release notifying stockholders and the public of the termination. The rights offering is subject to the following conditions unless waived by our board of directors:

- we receive minimum gross proceeds of at least \$10 million through the rights offering, such amount subject to increase by our board of directors;
- we reach an agreement with SVB to restructure our indebtedness on terms acceptable to us, in the sole discretion of our board of directors; and
- we renegotiate or otherwise reach a settlement with respect to a legacy building lease on terms acceptable to us.

See *“Recent Developments”* for a discussion of recent developments related to these conditions.

If the rights offering is not completed for any reason, will my subscription payment be refunded to me?

Yes. The subscription agent will hold all funds it receives until completion of the rights offering. If the rights offering is not completed for any reason, the subscription agent will return promptly, without interest, all subscription payments. If you own common stock in the name of a broker, dealer, bank, or other nominee, it may take longer for you to receive your subscription payment because the subscription agent will return payments through the record holder of your shares of common stock. We reserve the right to terminate the rights offering at any time in our sole discretion, including if, due to market conditions or otherwise, our board of directors deems it advisable not to proceed with the rights offering.

How will the Company be impacted if the rights offering is not completed?

We have significant liabilities and will need to complete this rights offering or obtain funds from other sources in the third quarter of 2023 in order to fund operations through the balance of 2023 and in 2024. Such cash would also allow us to explore and take advantage of growth opportunities and identify potential strategic partnerships. There can be no assurance that this rights offering will be successful, that we will be able to obtain funds from other sources, that the Company will reach an agreement with SVB to restructure its indebtedness under the senior term loan and the mezzanine loan on acceptable terms and conditions, that the Company will be able to reach an agreement with the landlord for its subsidiary’s legacy building lease on terms acceptable to us or that any cost-cutting measures will be sufficient to continue operations. If we cannot achieve any of the foregoing, the Company will not be able to continue as a going concern and will need to explore restructuring and reorganization initiatives.

See “*Risk Factors — Risks Related to this Rights Offering, the Preferred Stock, the Warrants and Our Common Stock — If the rights offering is not consummated or we are not able to obtain alternative financing in the third quarter of 2023, we will not have funds to meet our working capital requirements and to satisfy our repayment obligations under our debt agreements*” and “*Risk Factors — Risks Related to this Rights Offering, the Preferred Stock, the Warrants and Our Common Stock — Even if the rights offering is completed, we will require additional capital to fund our operations, and if we fail to obtain financing when needed or on acceptable terms, we will not be able to meet our working capital requirements or fund business operations.*”

Will our directors and executive officers participate in the rights offering?

To the extent they hold share of our common stock as of the Record Date, our directors and executive officers will be entitled to participate in the rights offering on the same terms and conditions applicable to other rights holders. None of our directors or executive officers has entered into any binding commitment or agreement to exercise subscription rights received in the rights offering. Amin J. Khoury, the Chairman of our board of directors and one of our co-founders, and Foundry Group Next, L.P., which is affiliated with our director Brad Feld, have informed us of their interest in participating in the rights offering; however, there can be no assurance as to what extent they will participate, if at all.

Has the board of directors made a recommendation to stockholders regarding the rights offering?

No. Our board of directors is not making a recommendation regarding your exercise of the subscription rights. Rights holders who exercise subscription rights will incur investment risk on new money invested. We cannot predict the price at which our shares of common stock will trade during or after the rights offering. You should make your decision based on your assessment of our business and financial condition, our prospects for the future, the terms of the rights offering and the information contained in this prospectus. See the section of this prospectus titled “*Risk Factors,*” and similarly titled sections in the documents incorporated by reference herein, for discussion of some of the risks involved in investing in our securities.

How do I exercise my subscription rights?

If you hold your common stock in your name and not through a broker, dealer, bank, or other nominee on the Record Date and you wish to participate in the rights offering, you must deliver a properly completed and signed subscription rights certificate, together with payment of the subscription price for both your basic subscription right and any over-subscription privilege you elect to exercise, to the subscription agent before 5:00 p.m. Eastern Time, on _____, 2023. If you are exercising your subscription rights through your broker, dealer, bank, or other nominee, you should promptly contact your broker, dealer, bank, or other nominee and submit your subscription documents and payment for the Units in accordance with the instructions and within the time period provided by your broker, dealer, bank or other nominee.

What if my shares are held in “street name”?

If you hold your common stock in the name of a broker, dealer, bank, or other nominee, then your broker, dealer, bank, or other nominee is the record holder of the shares of common stock that you own. Your nominee must exercise the subscription rights on your behalf. Therefore, you will need to have your nominee act for you.

If you wish to participate in this rights offering and purchase Units, please promptly contact your nominee. We will ask your nominee, who may be your broker, dealer, bank, or other nominee, to notify you of this rights offering.

What form of payment is required?

You must timely pay the full subscription price pursuant to the exercise of subscription rights by delivering to the subscription agent a personal check that clears before the expiration date or a wire transfer of immediately available funds.

Please note that funds paid by personal check may take at least five (5) business days to clear. If you decide to pay by means of a personal check, we urge you to make payment sufficiently in advance of the expiration date to ensure that the subscription agent receives cleared funds before that time.

When will I receive my new shares of preferred stock and warrants?

The subscription agent will arrange for the issuance of the preferred stock and warrants as soon as practicable after the expiration of the rights offering, payment for the Units subscribed for has cleared, and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected. All shares of preferred stock and warrants that you purchase in the rights offering will be issued in book-entry, or uncertificated form, meaning that you will receive a DRS from our transfer agent reflecting ownership of these securities if you are a holder of record. If you hold your shares of common stock in the name of a broker, dealer, bank, or other nominee, DTC will credit your account with your nominee with the securities you purchase in the rights offering.

After I send in my payment and subscription rights certificate to the subscription agent, may I cancel my exercise of subscription rights?

No. Exercises of subscription rights are irrevocable unless the rights offering is terminated (in the sole discretion of our board of directors), even if you later learn information that you consider to be unfavorable to the exercise of your subscription rights. You should not exercise your subscription rights unless you are certain that you wish to participate in the rights offering.

How much will the Company receive from the rights offering?

Assuming the rights offering is fully subscribed (and the number of Units permitted to be subscribed for is not increased by our board of directors as described herein), including any over-subscription privilege, we estimate that the net proceeds from the rights offering will be approximately \$ million, after deducting estimated offering expenses payable by us, and excluding any proceeds received upon exercise of any warrants. If all warrants included in the Units are exercised for cash, we will receive an additional \$ million.

Are there risks in exercising my subscription rights?

Yes. The exercise of your subscription rights involves risks. Exercising your subscription rights involves buying shares of our preferred stock and warrants to purchase our common stock and you should consider this investment as carefully as you would consider any other investment. We do not intend to list our preferred stock or the warrants on the Nasdaq Capital Market or on any other stock exchange or market, and no market for the preferred stock or the warrants exists. You should carefully consider the risks described under the heading "Risk Factors" and similarly titled sections in the documents incorporated by reference into this prospectus for a discussion of some of the risks involved in investing in our securities.

Can the board of directors terminate or extend the rights offering?

Yes. Our board of directors may decide to terminate the rights offering at any time and for any reason before the expiration of the rights offering. We also have the right to extend the rights offering for additional periods in our sole discretion for up to an additional 45 days. We do not presently intend to extend the rights offering. We will notify stockholders and the public if the rights offering is terminated or extended by issuing a press release announcing the extension no later than 9:00 a.m., Eastern Time, on the next business day after the most recently announced expiration date of the rights offering. In the event that we decide to extend the rights offering and you have already exercised your subscription rights, your subscription payment will remain with the subscription agent until such time as the rights offering closes or is terminated.

Our board of directors also reserves the right to amend or modify the terms of the rights offering in its sole discretion, including, without limitation, in order to increase participation in, or increase or decrease the size of, the rights offering. Such amendments or modifications may include a change in the subscription price, although no such change is presently contemplated. If we should make any fundamental changes to the terms of the rights offering set forth in this prospectus, we will file a post-effective amendment to the registration statement in which this prospectus is included, offer potential purchasers who have subscribed for Units the opportunity to cancel such subscriptions and issue a refund of any money advanced by such stockholder (without interest) and recirculate an updated prospectus after the post-effective amendment is declared effective by the SEC. In addition, upon such event, we may extend the expiration date of the rights

offering to allow holders of rights ample time to make new investment decisions and for us to recirculate updated documentation. Promptly following any such occurrence, we will issue a press release announcing any changes with respect to the rights offering and the new expiration date.

How do I exercise my subscription rights if I live outside the United States?

The subscription agent will hold subscription rights certificates for stockholders having addresses outside the United States. To exercise subscription rights, foreign stockholders must notify the subscription agent and timely follow other procedures described in the section entitled “*Rights Offering — Foreign Stockholders.*”

What fees or charges apply if I purchase Units?

We are not charging any fee or sales commission to issue subscription rights to you or to issue shares of preferred stock or warrants to you if you exercise your subscription rights. If you exercise your subscription rights through a nominee you are responsible for paying any fees your nominee may charge you.

What are the U.S. federal income tax consequences of exercising subscription rights?

The U.S. federal income tax consequences of the rights offering will depend on whether the rights offering is part of a “disproportionate distribution.” We intend to take the reporting position that the subscription rights issued to stockholders pursuant to the rights offering will not be a taxable distribution with respect to your existing common stock. The disproportionate distribution rules are complex, however, and their application is uncertain. The position we are taking is not binding on the Internal Revenue Service (“IRS”) or the courts and it is possible that the IRS could successfully challenge our reporting position and assert that the rights offering is a taxable distribution. You should consult your tax advisor as to the tax consequences of the rights offering in light of your particular circumstances. For a more detailed discussion, see “*U.S. Federal Income Tax Considerations*” on page [42](#).

To whom should I send my forms and payment?

If your shares are held in the name of a broker, dealer or other nominee, then you should send your subscription documents and subscription payment to that nominee in accordance with the instructions such nominee provides to you. If you are the record holder, then you should send your subscription documents, subscription rights certificate and subscription payment by registered mail, return receipt requested or courier service to:

By Mail:

Computershare Inc.
150 Royall Street, Suite V
Canton, Massachusetts 02021
Attention: Molekule Rights Offer

By Courier:

Computershare Inc.
150 Royall Street, Suite V
Canton, Massachusetts 02021
Attention: Molekule Rights Offer

You are solely responsible for completing delivery, either directly (if you are a record holder) to the subscription agent of your subscription rights certificate and payment or through your nominee (if you are a beneficial holder), to the subscription agent of your subscription documents and payment. We urge you to allow sufficient time for delivery of your subscription materials to the subscription agent.

If I hold preferred stock, how will I receive any dividends paid on the preferred stock?

Dividends on the preferred stock will be paid in cash, if declared by our board of directors (in its sole discretion) and paid out of funds legally available for such purpose, or if not so declared and paid in cash, then the liquidation preference will be adjusted and increased annually by an amount equal to 12% of the liquidation preference as in effect at such time (including any accrued and accumulated dividends).

Whom should I contact if I have other questions?

If you have any questions about the rights offering, including questions about subscription procedures and requests for additional copies of this prospectus or other documents, please contact the information agent, Georgeson, at 1290 Avenue of the Americas, 9th Floor, New York, NY 10104 or at the telephone number 888-607-6511.

RECENT DEVELOPMENTS

Balance Sheet and Liquidity

As previously reported, for the six months ended June 30, 2023, the Company incurred a net loss of \$34.9 million and its net cash used in operating activities was \$27.3 million. In addition, at June 30, 2023, the Company's accumulated deficit was \$42.8 million and we had approximately \$5.3 million of cash.

Notwithstanding the development of Molekule 360 hub (our indoor air quality management solution), integration of software and device technologies and satisfactory performance in our direct to consumer and retail revenues, revenues from our B2B channel have performed below the Company's expectations and, as a result, the Company is reducing its cost base. Backlog and orders for our new indoor air quality solutions from enterprise and commercial customers have fallen below expectations, resulting in efforts to defer or reduce costs while the Company continues to build a market and demand for its indoor air quality B2B business.

Based on the current liquidity position of the Company and delays in its IoT cloud deployment independence and orders from the B2B business, our board of directors and management have been exploring, and are continuing to explore, various capital raising opportunities, including but not limited to this rights offering. Some or all of the net proceeds from any capital raise would be used to invest in cost reduction programs associated with our products and services, conducting research and development and funding operations. The Company is seeking to raise at least \$10 million in gross proceeds in this rights offering.

The Company is currently in discussions with its principal lender, Silicon Valley Bank, a division of First-Citizens Bank & Trust Company ("SVB"), to restructure its indebtedness. As of June 30, 2023, we had \$4.3 million outstanding under a senior term loan with SVB, accruing interest at 9.25%, and maturing in March 2028, and \$30 million outstanding under a mezzanine loan with SVB, accruing interest at 14.25%, and maturing in March 2028. It is a condition to closing this rights offering that we reach an agreement with SVB to restructure our indebtedness. In addition, the Company's subsidiary has a legacy building lease in a building which the Company is currently in the process of winding down. Since May 2023, payments for rent under this lease have been obtained by the landlord from the subsidiary's previously posted cash letter of credit. That letter of credit will be depleted by approximately mid-September 2023. The Company, its subsidiary, and the landlord are in ongoing discussions concerning the termination of that legacy lease. It is a condition to closing this rights offering that we renegotiate the lease on terms acceptable to us.

The Company has the aforementioned and other significant liabilities and will need to complete this rights offering or obtain funds from other sources in the third quarter of 2023 in order to fund operations through the balance of 2023 and in 2024. Such funds would also afford the Company time to explore and take advantage of growth opportunities and identify potential strategic partnerships or effect the sale of the Company. There can be no assurance that this rights offering will be successful, that the Company's subsidiary will reach a mutually acceptable termination agreement with its landlord on the legacy building lease, that the Company could obtain funds from other sources, that the Company will reach an agreement with SVB, on acceptable terms and conditions, or that any cost-cutting measures will be sufficient to continue operations. If the Company cannot achieve any of the foregoing, the Company will not be able to continue as a going concern and will need to continue to explore restructuring and reorganization initiatives.

Merger Agreement with Aura

On February 26, 2023, we entered into a merger agreement with Aura Smart Air Ltd. ("Aura"), a company organized under the laws of the State of Israel (the "Merger Agreement").

As previously disclosed, on August 14, 2023, we informed Aura that we were terminating the Merger Agreement, in accordance with Section 8.02 and Section 8.01(c)(i) of the Merger Agreement. We believe that Aura has committed a material and incurable breach of Section 6.02 of the Merger Agreement such that we are entitled to terminate the Merger Agreement pursuant to Section 8.01(c)(i)(B) of the Merger Agreement. On August 14, 2023, Aura notified us that it disputed the termination of the Merger Agreement

and believes that we have breached Section 6.09 of the Merger Agreement. We are highly confident that we are not in breach of the Merger Agreement.

Notwithstanding Molekule's termination of the Merger Agreement for, among other things, Aura's failure to operate its business in the ordinary course, we had intended to continue discussions with Aura regarding future sales, marketing and technology collaboration and had intended to continue discussions regarding the parties' current arrangements in connection with, and certain disagreements under, the surviving stand-alone Technology Collaboration Agreement and Co-Distribution Agreement entered into contemporaneously with the Merger Agreement. However, on August 22, 2023, Aura publicly reported that it had received notice from its supplier that provides IoT connectivity services to Aura's products that such supplier had unilaterally disconnected all Aura products from the supplier's cloud services, so that the data from the sensors installed in Aura's products are no longer being transferred to Aura and, as a result, cannot be displayed on Aura's platform and application used by Aura's end customers, as part of the product's characteristics, and Aura has no possibility to control the characteristics of the various remote products. As a result, the Aura devices that Molekule sold and previously offered to sell through the Co-Distribution Agreement will no longer transmit data to or from Aura supplier's cloud and thus will not have IoT functionality, including control and monitoring. Molekule's legacy products do not depend on Aura's supplier's services and thus will not be impacted by such supplier's suspension of Aura's product IoT connectivity capabilities. The Company does not believe this will have a material adverse effect on its business. The Company continues to evaluate the impact of this development on its business..

RISK FACTORS

Investing in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, you should carefully consider the risk factors set forth below, the other information contained in this prospectus and any other risks described in our filings with the SEC, including but not limited to under the section entitled “Risk Factors” contained in our [Annual Report on Form 10-K for the fiscal year ended December 31, 2022](#), as amended or supplemented, including by subsequently filed Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. Any of these risks could materially and adversely affect our business, financial condition, results of operations, liquidity and cash flows. In such a case, you may lose all or part of your investment. The risks described below and referenced above are not the only risks facing us. Additional risks and uncertainties not currently known to us or those we currently view to be immaterial may also materially adversely affect our business, financial condition, results of operations, liquidity and cash flows. If any of the risks or uncertainties described in this prospectus, the documents incorporated by reference herein or our other SEC filings or any such additional risks and uncertainties actually occur, our business, financial condition or results of operations could be materially and adversely affected, which could cause our actual operating results to differ materially from those indicated or suggested by forward-looking statements made in this prospectus, the documents incorporated by reference herein or our other SEC filings or presented elsewhere by management from time to time. In that case, the trading price of our common stock could decline and you could lose all or part of your investment. Please also see the section of this prospectus titled “Special Note Regarding Forward-Looking Statements.”

Risks Related to this Rights Offering, the Preferred Stock, the Warrants and Our Common Stock

If the rights offering is not consummated or we are not able to obtain alternative financing in the third quarter of 2023, we will not have funds to meet our working capital requirements and to satisfy our repayment obligations under our debt agreements.

We have limited funds and are dependent upon the consummation of the rights offering to fund our working capital needs. If we fail to consummate this rights offering or obtain funds from other sources in the third quarter of 2023, we will not be able to continue as a going concern and will need to explore restructuring and reorganization initiatives.

Moreover, we are dependent upon the consummation of the rights offering to fulfill our obligations under our senior term loan and mezzanine term loan with SVB. As of June 30, 2023, we had \$4.3 million outstanding under the senior term loan, accruing interest at 9.25%, and maturing in March 2028, and \$30 million outstanding under the mezzanine loan, accruing interest at 14.25%, and maturing in March 2028. Both loan agreements require us to maintain a minimum cash balance of \$2.0 million. We are also required to generate revenue of at least \$50 million for the twelve months ended March 31, 2024. Non-compliance with this requirement may result in the debt maturity dates becoming accelerated. Management has been in discussions with SVB to restructure its indebtedness under these loan agreements. It is a condition to closing this rights offering that we reach an agreement with SVB to restructure our indebtedness. There can be no assurance, however, that such an agreement will be reached.

We incurred a net loss of \$34,902,648 during the six months ended June 30, 2023 and net cash used in operating activities was \$27,329,771 for the six months ended June 30, 2023. In addition, our accumulated deficit was \$42,819,443 at June 30, 2023. If we do not consummate the rights offering, we could face a default and acceleration of our debt and other obligations.

There can be no assurance that this rights offering will be consummated. If we fail to consummate this rights offering, we will be forced to seek alternative sources of capital to support our business operations, which may not be available. Future financings through equity investments will be dilutive to existing stockholders. Also, the terms of securities we may issue in future capital transactions may be more favorable for our new investors. Newly issued securities may include preferences, superior voting rights, the issuance of warrants or other derivative securities, and the issuance of incentive awards under equity employee incentive plans, which may have additional dilutive effects to existing stockholders. Further, we may incur substantial costs in pursuing future capital and/or financing, including investment banking fees, legal fees, accounting fees, printing and distribution expenses and other costs. We may also be required to recognize non-cash

expenses in connection with certain securities we may issue such as convertible notes and warrants, which will adversely impact our financial condition and results of operations.

Even if the Rights Offering is completed, we will require additional capital to fund our operations, and if we fail to obtain financing when needed or on acceptable terms, we will not be able to meet our working capital requirements or fund business operations.

We have concluded that our recurring losses from operations, recurring cash used in operating activities, accumulated deficit, expected working capital needs to fund our combined operations and new debt obligations as a result of our merger with Molekule, Inc. in January 2023 raise substantial doubt about our ability to continue as a going concern.

We believe that our existing cash and cash equivalents, together with the net proceeds of approximately \$ million from this rights offering, assuming that the rights offering is consummated and fully subscribed, may not enable us to fund our operating expenses and capital expenditure requirements beyond 2024. Our future viability is dependent on our ability to raise additional capital to finance our operations in the future.

Accordingly, even if the rights offering is completed, we will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources. Adequate additional financing may not be available to us on acceptable terms, or at all. Although we have successfully raised capital in the past, there is no assurance that we will be successful in obtaining sufficient funding on terms acceptable to us to fund continuing operations, if at all. If we fail to raise capital as and when needed, we will not be able to continue as a going concern and will need to explore restructuring and reorganization initiatives.

The subscription price determined for this rights offering is not necessarily an indication of our value.

In determining the subscription price, our board of directors considered a number of factors, including, but not limited to, the current and historical trading prices of our common stock on the Nasdaq Capital Market; the price at which stockholders might be willing to participate in the rights offering; the value of the preferred stock (and the common stock issuable upon conversion thereof) being issued as a component of the Unit; the value of the warrant (and the common stock issuable upon exercise thereof) being issued as a component of the Unit; our need for additional capital and liquidity; the cost of capital from other sources; and comparable precedent transactions, including the percentage of shares offered, the terms of the subscription rights being offered, the subscription price and the discount that the subscription price represented to the immediately prevailing closing prices for those offerings.

The subscription price does not necessarily bear any relationship to any established criteria for value. No valuation consultant or investment banker has opined upon the fairness or adequacy of the subscription price. You should not consider the subscription price as an indication of the value of the Company or our common stock.

Our failure to meet Nasdaq's continued listing requirements could result in a delisting of our common stock.

If we fail to satisfy Nasdaq's continued listing requirements, such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock. For example, failing to meet the minimum closing bid price of \$1.00 for 30 consecutive trading days constitutes non-compliance with a Nasdaq continuing listing standard. On August 30 and August 31, 2023, the closing bid price for our common stock was below \$1.00. If we fail to comply with the minimum closing bid price requirement, Nasdaq will send us a deficiency notice, and thereafter, if our common stock does not close at a minimum bid price of \$1.00 or more for ten consecutive trading days within 180 calendar days of our receipt of such deficiency notice, Nasdaq may institute proceedings to delist our common stock.

A delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our securities to become listed again, stabilize the market price or improve the liquidity of our

securities, prevent our securities from dropping below Nasdaq’s minimum bid price requirement or prevent future non-compliance with Nasdaq’s listing requirements.

The rights offering may cause the price of our common stock to decline.

Depending upon the market price of our common stock at the time of our announcement of the rights offering and its terms, including the subscription price, together with the number of shares of common stock issuable upon conversion or exercise of the preferred stock and warrants we could issue if the rights offering is completed, the rights offering may result in a decrease in the market price of our common stock. This decrease may continue during and after the completion of the rights offering. If that occurs, you may have committed to purchase shares of our common stock at a price greater than the prevailing market price. Further, if a substantial number of subscription rights are exercised and holders of the acquired shares of common stock received upon conversion or exercise of the preferred stock and warrants received in the rights offering choose to sell some or all such shares of common stock, the resulting sales could depress the market price of our common stock.

Because you may not revoke or change your exercise of the subscription rights, you could be committed to buying shares above the prevailing market price at the time the rights offering is completed.

Once you exercise your subscription rights, you may not revoke or change the exercise. The market price of our common stock may decline before the subscription rights expire. If you exercise your subscription rights and, afterwards, the market price of our common stock decreases below the subscription price, you will have committed to buying shares of our common stock at a price above the prevailing market price and could have an immediate unrealized loss.

Our common stock is traded on the Nasdaq Capital Market Exchange under the symbol “MKUL,” and the closing sale price of our common stock on August 31, 2023 was \$0.93 per share. There can be no assurances that the market price of our common stock will equal or exceed the subscription price at the time of exercise or at the expiration of the subscription rights offering period.

You may not be able to resell any shares of our common stock issuable upon conversion or exercise of the shares of preferred stock and warrants that you purchase pursuant to the exercise of subscription rights immediately upon expiration of the subscription rights offering period or be able to sell such shares of common stock at a price equal to or greater than the subscription price.

If you exercise subscription rights, you may not be able to resell the common stock issuable upon conversion or exercise of the shares of preferred stock and warrants purchased by exercising your subscription rights until you, or your broker, custodian bank or other nominee, if applicable, have received those securities and converted and/or exercised such securities (as applicable). Moreover, you will have no rights as a stockholder with respect to the shares of common stock underlying the securities you purchased in the rights offering until we issue the shares of common stock to you. Although we will endeavor to issue the shares of preferred stock and warrants as soon as practicable after completion of the rights offering, after all necessary calculations have been completed, there may be a delay between the expiration date of the rights offering and the time that these securities are issued. In addition, we cannot assure you that, following the exercise of your subscription rights, you will be able to sell the common stock issuable upon conversion or exercise of the preferred stock and warrants (as applicable) at a price equal to or greater than the price you effectively paid per share of such common stock.

You may not receive all of the Units for which you subscribe.

While we are distributing to holders of shares of our common stock and the Participating Warrant one (1) subscription right for every share of common stock owned or deemed to be owned, on the Record Date, we are seeking to raise at least \$10 million in gross proceeds in this rights offering. As a result, based on 34,654,459 shares of common stock outstanding as of August 9, 2023 and the 2,305,000 shares of common stock issuable upon exercise of the Participating Warrant, and assuming we do not issue additional shares of common stock, we would grant subscription rights to acquire 36,959,459 Units but will only accept subscriptions for 10,000 Units. Accordingly, enough Units may not be available to honor your subscription in full. If excess Units are available after the exercise of basic subscription rights, holders who fully exercise

their basic subscription rights will be entitled to subscribe for an additional number of Units. Over-subscription privileges will be allocated pro rata among rights holders who over-subscribed to the extent there is insufficient unsubscribed Units to accommodate all over-subscription requests in full. We cannot guarantee that you will receive any or the entire number of Units for which you subscribed. If for any reason the number of Units allocated to you is less than you have subscribed for, then the excess funds held by the subscription agent on your behalf will be returned to you, without interest, as soon as practicable after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected, and we will have no further obligations to you.

We may not be permitted to make current payment of dividends on the preferred stock.

Under Delaware law, we may only pay dividends or make distributions to our stockholders from our surplus (as determined in accordance with the Delaware General Corporation Law) or our net profits for the current fiscal year or the fiscal year before which the dividend or distribution is declared under certain circumstances. Therefore, our ability to pay dividends and make any other distributions in the future will depend upon our financial results, liquidity and financial condition.

If you do not exercise your subscription rights in full, your interest in the Company may be diluted as a result of this rights offering.

If you choose not to exercise your subscription rights, you will retain your current number of shares of our common stock. If other holders of rights fully exercise their subscription rights or exercise a greater proportion of their subscription rights than you exercise, and such stockholders ultimately convert or exercise (as applicable) their shares of preferred stock and warrants received in the rights offering, the percentage of our common stock owned by these other securityholders will increase relative to your ownership percentage, and your voting and other rights in the Company will likewise be diluted. Further, the shares of common stock issuable upon exercise of the warrants to be issued in the rights offering will dilute the ownership interest of stockholders and holders of warrants who do not participate in the rights offering or do not exercise their warrants.

We may cancel the rights offering at any time prior to the expiration of the rights offering period for any reason, and neither we nor the subscription agent will have any obligation to you except to return your subscription payment.

We may at our sole discretion cancel the rights offering at any time and for any reason prior to the expiration of the rights offering period. If we elect to cancel the rights offering, neither we nor the subscription agent will have any obligation with respect to the subscription rights except to return to you, without interest or deduction and as soon as practicable, any subscription payments.

We may amend or modify the terms of the rights offering at any time prior to the expiration of the rights offering in our sole discretion.

Our board of directors reserves the right to amend or modify the terms of the rights offering in its sole discretion for any reason, including, without limitation, in order to increase participation in, or increase or decrease the size of, the rights offering. Such amendments or modifications may include a change in the subscription price, although no such change is presently contemplated. If we should make any fundamental changes to the terms of the rights offering set forth in this prospectus, we will file a post-effective amendment to the registration statement in which this prospectus is included, offer potential purchasers who have subscribed for Units the opportunity to cancel such subscriptions and issue a refund of any money advanced by such stockholder, without interest, and recirculate an updated prospectus after the post-effective amendment is declared effective by the SEC. In addition, upon such event, we may extend the expiration date of the rights offering to allow holders of rights ample time to make new investment decisions and for us to recirculate updated documentation. Promptly following any such occurrence, we will issue a press release announcing any changes with respect to the rights offering and the new expiration date. The terms of the rights offering cannot be modified or amended after the expiration date of the rights offering.

This rights offering may limit our ability to use some or all of our net operating loss carryforwards in the future.

As of December 31, 2022, we had federal and state NOL carryforwards of approximately \$9,231,000 and \$6,908,000, respectively, and federal research and development (“R&D”) credit carryforwards of approximately \$68,000 that could be available to offset our future federal taxable income. If not utilized, the federal R&D credits will begin to expire in 2041. Our ability to utilize NOLs and R&D credit carryforwards to offset our future taxable income would be limited if we were to undergo an “ownership change” within the meaning of Section 382 of the Code. In general, an “ownership change” occurs whenever the percentage of the stock of a corporation owned by “5-percent stockholders” (within the meaning of Section 382 of the Code) increases by more than 50 percentage points over the lowest percentage of the stock of such corporation owned by such “5-percent stockholders” at any time over the testing period. Further, individuals purchasing in the rights offering will likely be aggregated together to constitute a group for Section 382 purposes to count toward an ownership change.

The Company has not undertaken an analysis of whether it has undergone an ownership change. However, it is likely that our merger with Molekule, Inc. resulted in an ownership change for this purpose. An ownership change under Section 382 of the Code would establish an annual limitation which may significantly limit the amount of NOLs and credits we could utilize to offset our taxable income in any single year. Limitations imposed on our ability to utilize NOLs could cause U.S. federal income taxes to be paid earlier than would be paid if such limitations were not in effect.

It is possible that the issuance of shares pursuant to exercised rights under this rights offering will cause an ownership change. Also, even if this rights offering does not cause an ownership change, it could increase the likelihood that we may undergo an ownership change for purposes of Section 382 of the Code in the future. Although the Company is restricting the ability of shareholders to acquire more than 4.99% of its issued and outstanding shares of common stock following the closing of the rights offering, such restrictions are subject to waivers that may be granted by the board of directors and, furthermore, there is no guarantee that these restrictions will prevent an ownership change from occurring as a result of the rights offering or a future transaction.

If you do not act promptly and follow the subscription instructions, your exercise of subscription rights may be rejected.

Rights holders that desire to purchase Units in the rights offering must act promptly to ensure that all required forms and payments are actually received by the subscription agent prior to the expiration date of the rights offering. If you are a beneficial owner of our common stock you must act promptly to ensure that your broker, dealer, custodian bank or other nominee acts for you and that all required forms and payments are actually received by the subscription agent prior to the expiration of the rights offering period. We are not responsible if your broker, dealer, custodian bank or other nominee fails to ensure that all required forms and payments are actually received by the subscription agent prior to the expiration of the rights offering period. If you fail to complete and sign the required subscription forms, send an incorrect payment amount or otherwise fail to follow the subscription procedures that apply to your exercise in the rights offering prior to the expiration of the rights offering period, the subscription agent may, depending on the circumstances, reject your subscription or accept it only to the extent of the payment received. Neither we nor the subscription agent undertakes to contact you concerning, or attempt to correct, an incomplete or incorrect subscription form. We have the sole discretion to determine whether the exercise of your subscription rights properly and timely follows the subscription procedures.

If you make payment of the subscription price by personal check, your check may not clear in sufficient time to enable you to purchase Units in the rights offering.

Any personal check used to pay the subscription price in the rights offering must clear prior to the expiration date of the rights offering, and the clearing process may require five or more business days. As a result, if you choose to use a personal check to pay the subscription price, it may not clear prior to the expiration date, in which event you would not be eligible to exercise your subscription rights. You may eliminate this risk by paying the total subscription price by transmitting such via wire transfer of immediately

available funds directly to the account maintained by the subscription agent. See the section of this prospectus titled “*Rights Offering*” for more information.

The receipt of subscription rights may be treated as a taxable dividend to you.

The U.S. federal income tax consequences of the rights offering to stockholders will depend on whether the rights offering is part of a “disproportionate distribution.” We intend to take the reporting position that the subscription rights issued to common stockholders pursuant to the rights will not be a taxable distribution with respect to your existing common stock. However, it is possible that the IRS could successfully challenge our reporting position and assert that the rights offering is a taxable distribution. For a discussion of the tax consequences if this distribution is non-taxable and the tax consequences if it is taxable, see the discussion in “*U.S. Federal Income Tax Considerations.*”

The subscription rights and Units are non-transferable and thus there will be no market for them.

You may not sell, transfer or assign your subscription rights or Units to anyone else. We do not intend to list the subscription rights on any securities exchange or any other trading market. Because the subscription rights are non-transferable, there is no market or other means for you to directly realize any value associated with the subscription rights.

There is no public market for the preferred stock included in the Units.

There is no established public trading market for the preferred stock, and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the preferred stock on any securities exchange or recognized trading system. Purchasers of the preferred stock may be unable to resell their shares of preferred stock or sell them only at an unfavorable price for an extended period of time, if at all.

Absence of a public trading market for the warrants included in the Units may limit your ability to resell the warrants.

There is no established trading market for the warrants, and we do not expect a market to develop. We do not intend to list the warrants for trading on Nasdaq Capital Market or any other securities exchange or market. Without an active market, we cannot assure you that you will be able to sell or otherwise transfer the warrants and you may not realize any value from the warrants by attempting to sell or otherwise transfer them for consideration.

The market price of our common stock may not remain above the exercise price of the warrants.

As of August 31, 2023, the closing price for our common stock was \$0.93 per share. The warrants being issued in connection with this rights offering become exercisable upon issuance and will expire five years from the date of issuance. The market price of our common stock may not remain above the exercise price of the warrants for any or all of the period between the issuance of the warrants and their expiration. Any warrants not exercised by their date of expiration will expire with no value and we will be under no further obligation to the warrant holder in respect of such warrants.

Our failure to maintain continued compliance with the listing requirements of the Nasdaq Capital Market exchange could result in the delisting of our common stock.

Our common stock has been listed on the Nasdaq Capital Market since November 2021. The rules of the Nasdaq Capital Market provide that shares will be delisted from trading in the event the share price of our common stock fails to meet the minimum closing bid price requirement, the financial condition and/or operating results of the Company appear to be unsatisfactory, the extent of public distribution or the aggregate market value of our common stock has become so reduced as to make further dealings on the Nasdaq Capital Market inadvisable, the Company has sold or otherwise disposed of its principal operating assets, or has ceased to be an operating company, or the Company has failed to comply with its listing agreements with the Nasdaq Capital Market.

The delisting of our common stock from the Nasdaq Capital Market would reduce the trading volume and liquidity in our common stock and may likely lead to decreases in the trading price of our common stock.

The delisting of our common stock may also materially impair our stockholders' ability to buy and sell shares of our common stock. In addition, the delisting of our common stock could significantly impair our ability to raise capital.

We will have considerable discretion over the use of the proceeds of the rights offering. Because our management will have broad discretion over the use of the net proceeds, you may not agree with how we use the proceeds, and we may not invest the proceeds successfully.

We have not determined the amount of net proceeds that we will apply to various corporate purposes. Our board of directors and management will have considerable discretion in the application of the net proceeds from this rights offering, and it is possible that we may allocate the proceeds differently than investors in the rights offering may desire or that we may fail to maximize the return on these proceeds. Accordingly, you will be relying on the judgment of our management with regard to the use of the proceeds from the rights offering, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the proceeds will be invested in a way that does not yield a favorable, or any, return for the Company.

Holders of our preferred stock and warrants will have no rights as a common stockholder until such holders convert or exercise their preferred stock or warrants, respectively, and acquire our common stock.

Until holders of preferred stock or warrants acquire shares of our common stock upon conversion or exercise of the preferred stock or warrants, respectively, holders of such securities will have no rights with respect to the shares of our common stock underlying such preferred stock or warrants. Upon conversion or exercise of the preferred stock or warrants, respectively, and their receipt of the resulting shares of common stock, the holders thereof will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date. Prior to conversion, holders of preferred stock will have limited voting rights.

The PIPE Warrants contain anti-dilution provisions that may cause significant dilution to our stockholders.

As of August 9, 2023, the PIPE Warrants were outstanding and exercisable to purchase an aggregate of up to 13,180,000 shares of our common stock. The 2022 Warrant, Series A Warrant and Series B Warrant have exercise prices of \$2.00, \$1.60 and \$1.84, respectively, and the Pre-Funded Warrant had a purchase price of \$1.59 per underlying share of common stock with a nominal exercise price. The PIPE Warrants contain certain anti-dilution provisions. For example, the 2022 Warrant, the Series A Warrant and the Series B Warrant include provisions that, subject to limited exceptions, would reduce their respective exercise prices in the event that we issue rights to all holders of our common stock (and not to the holder thereof). The exercise price of the 2022 Warrant, Series A Warrant and Series B Warrant may need to be adjusted as a result of the issuance of the preferred stock and the warrants in the rights offering, depending on the final pricing terms.

Changes in tax law, and the recently enacted Inflation Reduction Act of 2022, may adversely impact the Company and the value of our subscription rights, shares of our common stock and preferred stock, and warrants.

Changes to U.S. tax laws or other tax laws in jurisdictions in which we operate (which changes may have retroactive application) could adversely affect the Company or holders of our subscription rights, shares of our common stock and preferred stock, and warrants. In recent years, many changes to U.S. federal income tax laws have been proposed and made, and additional changes to U.S. federal income tax laws are likely to continue to occur in the future.

Since the warrants are executory contracts, they may have no value in a bankruptcy or reorganization proceeding.

In the event a bankruptcy or reorganization proceeding is commenced by or against us, a bankruptcy court may hold that any unexercised warrants are executory contracts that are subject to rejection by us with the approval of the bankruptcy court. As a result, holders of the warrants may, even if we have sufficient funds, not be entitled to receive any consideration for their warrants or may receive an amount less than they would be entitled to if they had exercised their warrants prior to the commencement of any such bankruptcy or reorganization proceeding.

Holders of Preferred Stock may be Required to Recognize Income on Constructive Distributions

If the redemption price of preferred stock exceeds its issue price by more than a de minimis threshold, such excess may be treated as a constructive distribution of additional stock that is included in income if either (i) the likelihood of a Deemed Liquidation Event is not considered remote, or (ii) the Company is more likely than not to exercise its rights to redeem the preferred stock, in each case, within the meaning of the regulations promulgated under Section 305 of the Code. In addition, holders of our preferred stock may be treated as receiving constructive distributions in an amount equal to the annual dividend yield on our preferred stock even if such amounts are not actually paid in cash. U.S. Holders and Non-U.S. Holders (as defined below) may be required to treat any such amounts as dividend income. There are significant uncertainties regarding the timing in which such constructive distributions must be recognized and the amounts thereof. See the discussion below under “— U.S. Federal Income Tax Considerations — Tax Considerations Applicable to U.S. Holders — Redemption Premium on Preferred Stock” and “— U.S. Federal Income Tax Considerations — Tax Considerations Applicable to Non-U.S. Holders — Redemption Premium on Preferred Stock.”

 The Preferred Stock may be Treated as Section 306 Stock

In general, under Section 306 of the Code, preferred stock received on exercise of subscription rights may constitute “Section 306 stock” and be subject to special tax rules requiring recognition of ordinary income on a disposition of such stock, unless: (i) the Company does not have any current or accumulated earnings and profits for the current year, or (ii) holders are able to establish to the satisfaction of the IRS that the distribution of subscription rights and subsequent disposition of preferred stock was not in pursuance of a plan having one of its principal purposes the avoidance of United States federal income tax. There can be no assurance, however, that any particular stockholder will be able to avoid Section 306 ordinary income treatment under these rules. If our preferred stock is considered Section 306 stock, holders may be required to recognize dividend income on certain dispositions of our preferred stock and may be unable to claim any losses with respect to dispositions of our preferred stock. See the discussion below under “— U.S. Federal Income Tax Considerations — Tax Considerations Applicable to U.S. Holders — Section 306 Stock” and “— U.S. Federal Income Tax Considerations — Tax Considerations Applicable to Non-U.S. Holders — Section 306 Stock.”

 Risks Related to Our Business

Investors should carefully consider the risks and uncertainties and all other information contained or incorporated by reference in this prospectus, including the risks and uncertainties discussed under “*Risk Factors*” in our most recent Annual Report on Form 10-K, as may be amended from time to time, and in subsequent SEC filings that are incorporated herein by reference, as well as the risks described below. All these risk factors are incorporated by reference herein in their entirety. These risks and uncertainties are not the only ones facing us. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment. This prospectus and the incorporated documents also contain forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks mentioned in this prospectus.

 Our audited consolidated financial statements include a note regarding substantial doubt about our ability to continue as a going concern.

As set forth in Note 1 of the audited consolidated financial statements incorporated by reference into this prospectus, we have concluded that our recurring losses from operations, recurring cash used in operating activities, accumulated deficit, expected working capital needs to fund our combined operations and new debt obligations as a result of our merger with Molekule, Inc. in January 2023 raise substantial doubt about our ability to continue as a going concern, due to the risk that we may not have sufficient cash and liquid assets at December 31, 2022 to cover our operating and capital requirements for the period through March 31, 2024; and if sufficient cash cannot be obtained, we would have to substantially alter, or possibly even discontinue, operations.

We incurred a net loss of \$34,902,648 during the six months ended June 30, 2023 and our net cash used in operating activities was \$27,329,771 for the six months ended June 30, 2023. In addition, our accumulated deficit was \$42,819,443 and we had cash of \$5,269,376 at June 30, 2023. Management's plans to fund our operations include raising capital, managing costs and generating sufficient revenues to offset costs.

There can be no assurances that we will be able to secure any such additional financing on acceptable terms and conditions, which would have a material adverse effect on our business, financial condition and results of operations. If we cannot successfully continue as a going concern, our investors may lose a large proportion of or even their entire investment.

We may not be successful in implementing our proposed business strategy.

We may not be successful in implementing our proposed business strategy. In order to be successful, we will need to, among other things:

- successfully establish our technology and brand;
- establish a commercial footprint;
- accelerate development of prototypes and market introduction of our devices and other novel applications of our proprietary SteriDuct and PECO technologies;
- increase revenues from our B2B channel;
- capitalize on our collaboration with experts in aerospace;
- explore opportunities for collaboration; and
- identify opportunities to establish industry leadership domestically and internationally.

We cannot assure you that we will be able to meet these objectives. Notwithstanding the development of Molekule 360 hub (our indoor air quality management solution), integration of software and device technologies and satisfactory performance in our direct to consumer and retail revenues, revenues from our B2B channel have performed below the Company's expectations and, as a result, the Company is reducing its cost base. Backlog and orders for our new indoor air quality solutions from enterprise and commercial customers have fallen below expectations, resulting in efforts to defer or reduce costs while the Company continues to build a market and demand for its indoor air quality B2B business. A failure to meet our business plans and expectations would have a material adverse effect on our business, financial condition and results of operations.

A failure by us and our subsidiary to terminate a legacy building lease in a building that the Company is currently in the process of winding down would adversely impact our business, financial condition and results of operations.

Our subsidiary has a legacy building lease in a building that the Company is currently in the process of winding down. Since May 2023, payments for rent thereunder have been obtained by the landlord from the subsidiary's previously posted cash letter of credit. That letter of credit will be depleted by approximately mid-September 2023.

We, our subsidiary, and the landlord are in ongoing discussions concerning the termination of that legacy lease. A failure by us and our subsidiary to terminate the legacy lease on terms acceptable to us would adversely impact our business, financial condition and results of operations.

The Company is in the process of negotiating the termination of several arrangements with contract manufacturers based upon legacy purchase orders without formal contracts, and the outcome of these negotiations remains uncertain but could result in the Company procuring inventories for product offerings with declining demand, which may result in higher levels of inventory and a lower cash balance.

The Company has product supply arrangements with several contract manufacturers, which are documented in the form of purchase orders, and not formal product supply agreements, which would normally include, among other terms, initial pricing, duration of the arrangement, initial purchase

requirements, termination rights of the parties and other standard contractual terms. The Company's requirements for its product offerings has shifted over the past 12-18 months, which, if continued, could warrant modification or termination of these supply arrangements. The Company has had preliminary discussions with these suppliers regarding the termination of the respective arrangement. The Company believes the cancelation of these arrangements, if consummated, may result in final purchases of inventory by the Company over agreed upon periods at specified pricing. The Company currently estimates that the aggregate amount of such final purchases could be between \$4.5 million and \$5.0 million. However, there can be no assurance that such discussions will be successful. In the event that these purchase arrangements are terminated, the Company would likely procure inventories for product offerings that would result in higher levels of inventories and lower cash balances and which could adversely impact the Company's cash flows and liquidity.

USE OF PROCEEDS

Assuming the rights offering is fully subscribed, including any over-subscription privilege, we expect the net proceeds from the sale of the securities that we are offering to be approximately \$ million, after deducting estimated offering expenses payable by us, and excluding any proceeds received upon exercise of any warrants.

We intend to use the net proceeds from this rights offering for working capital and general corporate purposes. The net proceeds obtained from the rights offering, assuming it is successfully consummated, will enable us to restructure our capital structure. The net proceeds obtained from the rights offering will also provide necessary capital to fund our working capital needs, execute our current business plans and fund business operations through 2024. In addition, the capital raised through the rights offering may facilitate our ability to pursue strategic alternatives, including a potential sale of the Company. Some of the net proceeds may also be used to manage and help alleviate costs associated with developing our products and services, conducting research and development and funding operations.

Our expected use of net proceeds from this rights offering represents our current intentions based upon our present plans and business condition. The amounts and timing of our actual use of net proceeds will vary depending on numerous factors. Management will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the net proceeds. Pending the uses described above, we intend to invest the net proceeds in interest-bearing investment-grade securities or deposits.

DILUTION

Purchasers of our common stock, which is issuable upon conversion of the preferred stock and upon exercise of the warrants contained in the Units, will experience an immediate dilution of the net tangible book value per share of our common stock. The net tangible book value of our common stock as of June 30, 2023 was approximately \$(25.6) million, or approximately \$(0.75) per share. Net tangible book value per share represents the amount of our total tangible assets, excluding goodwill and intangible assets, less total liabilities divided by the total number of shares of our common stock outstanding.

Dilution per share of common stock represents the difference between the amount paid by purchasers of Units in this offering and the net tangible book value per share of our common stock immediately following the completion of this rights offering.

After giving effect to the assumed sale of 10,000 Units in the rights offering at the subscription price of \$1,000 per Unit, paid in cash, and assuming immediate conversion of all 10,000 shares of preferred stock and no exercise of the warrants, after deducting our estimated offering expenses payable by us, our pro forma net tangible book value as of June 30, 2023 would have been approximately \$ million or approximately \$ per share. This represents an immediate increase in pro forma net tangible book value of approximately \$ per share to our existing stockholders and an immediate dilution in pro forma net tangible book value of approximately \$ per share to purchasers in this rights offering, as illustrated by the following table:

Preferred stock conversion price	\$
Net tangible book value per common share as of June 30, 2023	\$ (0.75)
Increase in net tangible book value per common share attributable to this rights offering	\$
Pro forma net tangible book value per common share as of June 30, 2023 after giving effect to this rights offering	\$
Dilution in net tangible book value per common share to purchasers in this rights offering	\$

The discussion of dilution, and the table quantifying it, assume no exercise of the PIPE Warrants or the warrants exercisable into shares of common stock issued during this offering, or other potentially dilutive securities. The exercise of potentially dilutive securities having an exercise price less than the effective price paid per share of common stock issuable upon conversion or exercise of the preferred stock and warrants, respectively, would increase the dilutive effect to new investors.

The foregoing discussion and table above is based on 34,046,500 shares of common stock outstanding as of June 30, 2023 and excludes the following potentially dilutive securities as of June 30, 2023:

- 13,180,000 shares of our common stock issuable upon the exercise of the PIPE Warrants; and
- 2,530,859 shares of our common stock that remain available for future issuance under our 2021 Incentive Award Plan, Director Deferred Compensation Plan and Employee Stock Purchase Plan.

To the extent that the PIPE Warrants or the warrants contained in the Units are exercised or additional shares of common stock, or securities convertible into or exercisable to subscribe for additional shares of our common stock, are issued pursuant to any of our 2021 Incentive Award Plan, Director Deferred Compensation Plan or our Employee Stock Purchase Plan, there will be additional dilution per share to the investors purchasing Units in this rights offering.

RIGHTS OFFERING

Subscription Rights

We are distributing to the holders of our common stock and the Participating Warrant, at no charge, non-transferable subscription rights to purchase Units at a subscription price per Unit equal to \$1,000. Each subscription right will entitle you to purchase one (1) share of our preferred stock and a warrant to purchase shares of our common stock. Each holder will receive one subscription right for each whole share of our common stock owned or deemed to be owned (in the case of the Participating Warrant) as of the Record Date. Each subscription right entitles the rights holder to a basic subscription right and an over-subscription privilege.

Basic Subscription Right

Your basic subscription right will entitle you to purchase Units, each comprised of one (1) share of preferred stock and a warrant to purchase shares of our common stock, at the subscription price of \$1,000 per Unit. For example, if you own 100 shares of common stock on the Record Date, you will receive 100 subscription rights to purchase 100 shares of preferred stock and a warrant to purchase shares of common stock for a total payment of \$100,000. You may exercise all or a portion of your basic subscription right or you may choose not to exercise your basic subscription right at all. If you do not exercise your basic subscription right in full, you will not be entitled to exercise your over-subscription privilege.

In addition, sufficient Units may not be available to honor your basic subscription right in full. While we are distributing one subscription right for every share of common stock owned or deemed to be owned (in the case of the Participating Warrant) on the Record Date, we are seeking to raise at least \$10 million in gross proceeds in this rights offering. As a result, we would grant subscription rights to acquire 36,959,459 Units, based on 34,654,459 shares of common stock outstanding as of August 9, 2023 (and assuming we do not issue additional shares of common stock). However, we will only accept subscriptions for 10,000 Units.

If exercises of the basic subscription right exceed the number of Units available in the rights offering, we will allocate the available Units pro rata among the rights holders exercising the basic subscription right in proportion to the number of shares of our common stock each of those rights holders owned or is deemed to own (in the case of the Participating Warrant) on the Record Date, relative to the number of shares owned or deemed to be owned on the Record Date by all rights holders exercising the basic subscription right. If this pro rata allocation results in any rights holders receiving a greater number of Units than the rights holder subscribed for pursuant to the exercise of the basic subscription right, then such rights holder will be allocated only that number of Units for which the rights holder subscribed, and the remaining Units will be allocated among all other rights holders exercising their basic subscription right on the same pro rata basis described above. The proration process will be repeated until all shares have been allocated.

If for any reason the amount of Units allocated to you is less than you have subscribed for, then the excess funds held by the subscription agent on your behalf will be returned to you, without interest, as soon as practicable after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected, and we will have no further obligations to you.

Over-Subscription Privilege

If you exercise your basic subscription right in full on a timely basis, you may also choose to exercise your over-subscription privilege. You will only be able to actually purchase additional Units pursuant to your over-subscription privilege if other eligible rights holders do not fully exercise their basic subscription rights and there are Units that remain unsubscribed at the expiration of the rights offering.

Subject to proration, if applicable and as described herein, we will seek to honor the over-subscription requests in full. If requests pursuant to the over-subscription privilege exceed the number of Units available, however, we will allocate the available Units pro rata among the rights holders exercising the over-subscription privilege in proportion to the number of shares of our common stock each of those rights holders owned or is deemed to own (in the case of the Participating Warrant) on the Record Date, relative

to the number of shares of our common stock owned or deemed owned by all rights holders exercising the over-subscription privilege on the Record Date. If this pro rata allocation results in any rights holder receiving a greater number of Units than the record holder subscribed for pursuant to the exercise of the over-subscription privilege, then such rights holder will be allocated only that number of Units for which the rights holder oversubscribed, and the remaining Units will be allocated among all other rights holders exercising the over-subscription privilege on the same pro rata basis described above. The proration process will be repeated until all Units have been allocated. The subscription agent for the rights offering will determine the over-subscription allocation based on the formula described above.

The table below illustrates the proration methodology, assuming hypothetically that (i) there are 1,000 Units that remain unsubscribed at the expiration of the rights offering, (ii) there are 10,000 shares of common stock outstanding as of the applicable record date, (iii) other than the three rights holders set forth in the table below, no other rights holders elect to exercise their over-subscription privilege and (iv) the three rights holders, each of whom has timely and fully exercised its basic subscription right with respect to all of the basic subscription rights it holds, elect to exercise their over-subscription privilege for the amount of shares set forth below:

Holder	A	B		C	D	E	F	G	H
	Common Stock as of Record Date	Basic Subscription Rights ⁽¹⁾		Over-Subscription Request	Units Allocated (1 st round) ⁽²⁾	Units Allocated in Excess of Request ⁽³⁾	Units to be Issued (1 st Round) ⁽⁴⁾	Units to be Issued (2 nd round) ⁽⁵⁾	Total Units Issued
		Rights	Units						
1	5,000	5,000	5,000	3,000	588	—	588	12	600
2	2,500	2,500	2,500	2,000	294	—	294	6	300
3	1,000	1,000	1,000	100	118	18	100	—	100
Total							<u>982</u>	<u>18</u>	<u>1,000</u>

- (1) The total shares of common stock used in the denominator for the first over-subscription round and second over-subscription round is determined as follows:

Holder	Common Stock as of Record Date	Common Stock Included in 1 st Round Denominator	Common Stock Included in 2 nd Round Denominator
1	5,000	5,000	5,000
2	2,500	2,500	2,500
3	1,000	1,000	—
Other holders not exercising their over-subscription privilege	1,500	—	—
Total	<u>10,000</u>	<u>8,500</u>	<u>7,500</u>

- (2) Column D represents each holder's pro rata portion of the unsubscribed Units based on all of the holders participating in the first over-subscription round. This amount is calculated by multiplying 1,000 (the assumed number of unsubscribed Units) by a fraction, the numerator of which is, with respect to any holder, the amount in Column A with respect to that holder, and the denominator of which is the total number of shares in Column A held by holders participating in that over-subscription round (e.g., for holder 1 the calculation is: 1,000 multiplied by (5,000 divided by 8,500)).
- (3) Column E represents the number of Units allocated to a holder in excess of its over-subscription request (e.g., for holder 3: 118 minus 100).
- (4) Column F represents the number of Units actually issued to each holder in the first over-subscription round and equals Column D less Column E (e.g., for holder 3: 118 minus 100).
- (5) Column G represents each holder's pro rata portion of unsubscribed Units based on all of the holders participating in the second over-subscription round. This amount is calculated by multiplying the Units available for that over-subscription round by a fraction, the numerator of which is, with respect to any

holder, the amount in Column A with respect to that holder, and the denominator of which is the total number of shares in Column A held by all of the holders participating in the second over-subscription round (e.g., for holder 1 the calculation is: 18 *multiplied by* (5,000 *divided by* 7,500)). In the second over-subscription round, 18 Units were allocated, representing the Units allocated to holder 3 in excess of its request.

To properly exercise your over-subscription privilege, you must deliver the subscription payment related to your over-subscription privilege before the rights offering expires. Because we will not know the total number of unsubscribed Units (if any) before the rights offering expires, if you wish to maximize the number of Units you purchase pursuant to your over-subscription privilege, you will need to deliver payment in an amount equal to the aggregate subscription price for the maximum number of Units that may be available to you (i.e., for the maximum number of Units available to you, assume you exercise all of your basic subscription right and are allotted the full amount of your over-subscription without reduction).

To the extent the aggregate subscription payment of the actual number of unsubscribed Units available to you pursuant to the over-subscription privilege is less than the amount you actually paid in connection with the exercise of the over-subscription privilege, you will be allocated only the number of unsubscribed Units available to you, and any excess subscription payments will be returned to you, without interest or deduction, as soon as practicable after expiration of the rights offering.

We can provide no assurances that you will actually be entitled to purchase the number of Units issuable upon the exercise of your over-subscription privilege in full at the expiration of the rights offering. We will not be able to satisfy any requests for Units pursuant to the over-subscription privilege if all of our stockholders exercise their basic subscription right in full, and we will only honor an over-subscription privilege to the extent sufficient unsubscribed Units are available at the expiration of the rights offering.

Limitation on the Purchase of Units

You may only purchase the number of Units purchasable upon exercise of the basic subscription right distributed to you in the rights offering, plus the over-subscription privilege, if any. Accordingly, the number of Units that you may purchase in the rights offering is limited by the number of shares of our common stock you own or are deemed to own (in the case of the Participating Warrant) on the Record Date and by the extent to which other stockholders exercise their basic subscription right and over-subscription privileges, all of which we cannot determine prior to completion of the rights offering.

In addition, in order to protect our ability to use our net operating losses and other tax benefits to offset potential future income taxes for federal income tax purposes, we reserve the right, in our sole discretion, to limit the number of Units any person or entity, together with related persons or entities, may purchase pursuant to the exercise of basic or over-subscription privileges, where such purchase, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning 4.99% or more of our issued and outstanding shares of common stock following the closing of the rights offering unless such person or entity has obtained a prior waiver from our board of directors to acquire, own or control such shares of common stock. Amin J. Khoury and Foundry Group Next, L.P. have both obtained this waiver from our board of directors. Our board of directors may grant waivers to other major shareholders that currently own more than 4.99% of our outstanding shares of common stock. It is possible that the issuance of any units to any such persons or entities, or the exercise of warrants issued as part of the units by any such persons or entities, may result in the Company being subject to a present or future "ownership change" within the meaning of Section 382 of the Code, which may significantly limit the amount of NOLs and credits we could utilize to offset our taxable income in any single year.

Subscription Price

The subscription price is \$1,000 per Unit. The subscription price does not necessarily bear any relationship to our past or expected future results of operations, cash flows, current financial condition, or any other established criteria for value.

Determination of Subscription Price

In determining the subscription price, our board of directors considered a variety of factors including those listed below:

- the current and historical trading prices of our common stock on the Nasdaq Capital Market;
- a price that would increase the likelihood of participation in the rights offering;
- the value of the common stock issuable upon conversion of the preferred stock which is a component of the Unit;
- the value of the warrant being issued as a component of the Unit;
- our need for additional capital and liquidity;
- the cost of capital from other sources; and
- comparable precedent transactions, including the percentage of shares offered, the terms of the subscription rights, the subscription price, and the discount the subscription price represented to the immediately prevailing closing prices for those offerings.

In conjunction with the review of these factors, our board of directors reviewed our history and prospects, including our past and present earnings and cash requirements, our prospects for the future, the outlook for our industry and our current financial condition. Our board of directors believes that the subscription price should be designed to provide an incentive to our current stockholders to participate in the rights offering and exercise their basic subscription right and their over-subscription privilege.

The subscription price does not necessarily bear any relationship to any established criteria for value. No valuation consultant or investment banker has opined upon the fairness or adequacy of the subscription price. You should not consider the subscription price as an indication of actual value of the Company or our common stock. The market price of our common stock may decline during or after the rights offering. We cannot predict the price at which our shares of common stock will trade after the rights offering. You should obtain a current price quote for our common stock before exercising your subscription rights and make your own assessment of our business and financial condition, our prospects for the future, and the terms of this rights offering. Once made, all exercises of subscription rights are irrevocable.

Non-Transferability of Subscription Rights

The subscription rights are non-transferable (other than by operation of law) and, therefore, you may not sell, transfer, assign or give away your subscription rights to anyone. The subscription rights will not be listed for trading on any stock exchange or market.

No Recombination

The preferred stock and warrants comprising the Units will separate upon the exercise of the subscription rights, and the Units will not trade as a separate security. Holders may not recombine shares of preferred stock and warrants to receive a Unit.

Expiration Date; Extension

The subscription period, during which you may exercise your subscription rights, expires at 5:00 p.m. Eastern Time, on _____, 2023, which is the expiration of the rights offering. If you do not exercise your subscription rights before that time, your subscription rights will expire and will no longer be exercisable. We will not be required to sell Units to you if the subscription agent receives your subscription rights certificate or your subscription payment after that time. We have the option to extend the rights offering in our sole discretion, for additional periods, not to exceed 45 days, although we do not presently intend to do so. We may extend the rights offering by giving oral or written notice to the subscription agent before the rights offering expires. If we elect to extend the rights offering, we will issue a press release announcing the extension no later than 9:00 a.m. Eastern Time, on the next business day after the most recently announced expiration date of the rights offering.

If you hold your common stock in the name of a broker, dealer, custodian bank or other nominee, the nominee will exercise the subscription rights on your behalf in accordance with your instructions. Please note that the nominee may establish a deadline that may be before 5:00 p.m. Eastern Time, on _____, 2023, which is the expiration date that we have established for the rights offering.

Termination

We may terminate the rights offering at any time and for any reason prior to the completion of the rights offering. If we terminate the rights offering, we will issue a press release notifying stockholders and the public of the termination. The rights offering is subject to the following conditions unless waived by our board of directors:

- we receive minimum gross proceeds of at least \$10 million through the rights offering, such amount subject to increase by our board of directors;
- we reach an agreement with SVB to restructure our indebtedness on terms acceptable to us; and
- we renegotiate or otherwise reach a settlement with respect to a legacy building lease on terms acceptable to us.

See “*Recent Developments*” for recent developments with respect to the above conditions.

Return of Funds upon Completion or Termination

The subscription agent will hold funds received in payment for Units in a segregated account pending completion of the rights offering. The subscription agent will hold this money until the rights offering is completed or is terminated. You will not be able to rescind your subscription. Any excess subscription payments, including refunds resulting from will be returned to you as soon as practicable after the expiration of the rights offering, without interest or deduction. If the rights offering is terminated for any reason, all subscription payments received by the subscription agent will be returned as soon as practicable, without interest or deduction.

Methods for Exercising Subscription Rights

The exercise of subscription rights is irrevocable and may not be canceled or modified. You may exercise your subscription rights as follows:

Subscription by Record Holders

Rights holders who are registered holders of our common stock or the Participating Warrant may exercise their subscription rights by properly completing and executing the subscription rights certificate and forwarding it, together with your full payment, to the subscription agent at the address given below under “— *Subscription Agent*,” to be received before 5:00 p.m. Eastern Time, on _____, 2023.

Subscription by Beneficial Owners

If you are a beneficial owner of shares of our common stock that are registered in the name of a broker, dealer, custodian bank, or other nominee, you will not receive a subscription rights certificate. Instead, we will issue subscription rights to such nominee. If you are not contacted by your nominee, you should promptly contact your nominee in order to subscribe for Units in the rights offering and follow the instructions provided by your nominee.

To properly exercise your over-subscription privilege, you must deliver the subscription payment related to your over-subscription privilege before the rights offering expires.

Payment Method

You must timely pay the full subscription payment, in U.S. currency, for the full number of Units you wish to acquire pursuant to the exercise of subscription rights (including any exercise of the over-subscription privilege).

If you are a record holder, you must submit your subscription payment by delivering a:

- personal check or bank draft drawn against a U.S. bank payable to “Computershare Trust Company, N.A.”; or
- wire transfer of immediately available funds directly to the account maintained by the subscription agent.

You should read the instruction letter accompanying the subscription rights certificate carefully and strictly follow it. **Do not send subscription rights certificates or payments directly to the Company.** We will not consider your subscription received until the subscription agent has received delivery of a properly completed and duly executed subscription rights certificate and payment of the full subscription price.

The method of delivery of subscription rights certificates and payment of the full subscription price to the subscription agent will be at the risk of the holders of subscription rights. If sent by mail, we recommend that you send those statements and payments by registered mail, properly insured, with return receipt requested, or by overnight courier, and that you allow a sufficient number of days to ensure delivery to the subscription agent before the rights offering expires.

If you are a beneficial owner of shares of our common stock that are registered in the name of a broker, dealer, custodian bank or other nominee, please follow the instructions provided by your nominee.

Clearance of Personal Checks

If you are a record holder and you are paying by personal check, please note that payment will not be deemed to have been received by the subscription agent until the check has cleared, which could take at least five (5) business days. Any personal check used to pay for Units must clear the appropriate financial institutions prior to 5:00 p.m., Eastern Time, on _____, 2023, the expected expiration date of this rights offering, unless we, in our sole discretion, extend the period for exercising the subscription rights. Accordingly, holders that wish to pay the subscription price by means of a personal check are urged to make payment sufficiently in advance of the expiration of the rights offering to ensure such payment is received and clears by such date. If you elect to exercise your subscription rights, we urge you to consider using a wire transfer of immediately available funds to ensure that the subscription agent receives your funds prior to the expiration of the rights offering.

Subscription Agent and Information Agent

The subscription agent for this rights offering is Computershare. The address to which subscription rights certificates and payments should be mailed or delivered by overnight courier is provided below.

By Mail:

Computershare Inc.
150 Royall Street, Suite V
Canton, Massachusetts 02021
Attention: Molekule Rights Offer

By Courier:

Computershare Inc.
150 Royall Street, Suite V
Canton, Massachusetts 02021
Attention: Molekule Rights Offer

If sent by mail, we recommend that you send documents and payments by registered mail, properly insured, with return receipt requested, and that you allow a sufficient number of days to ensure delivery to the subscription agent before the rights offering expires.

If you deliver subscription documents or subscription rights certificates in a manner different than that described in this prospectus, then we may not honor the exercise of your subscription rights.

Missing or Incomplete Subscription Forms or Payment

If you fail to complete and sign the subscription rights certificate or otherwise fail to follow the subscription procedures that apply to the exercise of your subscription rights before the rights offering expires, the subscription agent will reject your subscription or accept it to the extent of the payment received. Neither we nor the subscription agent undertakes any responsibility or action to contact you concerning

an incomplete or incorrect subscription form, nor are we under any obligation to correct such forms. We have the sole discretion to determine whether a subscription exercise properly complies with the subscription procedures.

The payment received will be applied to exercise your subscription rights to the fullest extent possible based on the amount of the payment received. Any excess subscription payments received by the subscription agent will be returned, without interest or deduction, as soon as practicable following the expiration of the rights offering.

Issuance of Preferred Stock and Warrants

The shares of preferred stock and warrants that are purchased in the rights offering as part of the Units will be issued in book-entry, or uncertificated, form meaning that you will receive a DRS from our transfer agent reflecting ownership of these securities if you are a holder of record of shares of our common stock or the Participating Warrant. If you hold your shares of common stock in the name of a custodian bank, broker, dealer, or other nominee, DTC will credit your account with your nominee with the securities you purchased in the rights offering.

No Fractional Shares

We do not intend to issue fractional shares of preferred stock or fractional shares of common stock upon exercise of warrants issued in the rights offering. To the extent that rounding occurs, any excess subscription payments received by the subscription agent will be returned as soon as practicable after expiration of the rights offering, without interest or deduction. Similarly, no fractional shares of common stock will be issued in connection with the conversion of the preferred stock. Instead, for any such fractional share of common stock that would otherwise have been issuable upon conversion of shares of preferred stock, we may, at our election, pay a cash payment equal to such fraction multiplied by the conversion price or round up to the next whole share, and for any such fractional share of common stock that would have otherwise been issued upon exercise of warrants, we will round up such fraction to the next whole share.

Warrant Agent

The warrant agent for the warrants is Computershare.

Notice to Brokers and Nominees

If you are a broker, dealer, bank, or other nominee holder that holds shares of our common stock, you should notify the beneficial owners of the shares for whom you are the nominee of the rights offering as soon as possible to learn their intentions with respect to exercising their subscription rights. If a beneficial owner of our common stock so instructs, you should complete the subscription rights certificate and submit it to the subscription agent with the proper subscription payment by the expiration date. You may exercise the number of subscription rights to which all beneficial owners in the aggregate otherwise would have been entitled had they been direct holders of our common stock on the Record Date, provided that you, as a nominee, make a proper showing to the subscription agent by submitting the form entitled “nominee holder certification,” which is provided with your rights offering materials. If you did not receive this form, you should contact the subscription agent to request a copy.

Validity of Subscriptions

We will resolve all questions regarding the validity and form of the exercise of your subscription rights, including time of receipt and eligibility to participate in the rights offering. Our determination will be final and binding. Once made, subscriptions are irrevocable; we will not accept any alternative, conditional, or contingent subscriptions. We reserve the absolute right to reject any subscriptions not properly submitted or the acceptance of which would be unlawful. You must resolve any irregularities in connection with your subscriptions before the expiration date of the rights offering, unless we waive them in our sole discretion. Neither we nor the subscription agent is under any duty to notify you or your representative of defects in your subscriptions. A subscription will be considered accepted, subject to our right to withdraw or terminate the rights offering, only when the subscription agent receives a properly completed and duly executed

subscription rights certificate and any other required documents and the full subscription payment. Our interpretations of the terms and conditions of the rights offering will be final and binding.

Stockholder Rights

You will have no rights as a holder of the shares of our common stock issuable upon conversion of the preferred stock issued in the rights offering until such preferred stock is converted into common stock and the shares of common stock are issued in book-entry form or your account at your broker, dealer, bank, or other nominee is credited with the shares of our common stock. Similarly, holders of warrants issued in connection with the rights offering will not have rights as holders of our common stock until such warrants are validly exercised and the shares of common stock underlying the warrants are issued to the holder.

Foreign Stockholders

We will not mail this prospectus or any subscription rights certificates to stockholders with addresses that are outside the United States or that have an army post office or foreign post office address. The subscription agent will hold these subscription rights certificates for their account. To exercise subscription rights, our foreign stockholders must notify the subscription agent prior to 5:00 p.m. Eastern Time, on _____, 2023, the fifth business day prior to the expiration date, of your exercise of subscription rights and provide evidence satisfactory to us, such as a legal opinion from local counsel, that the exercise of such subscription rights does not violate the laws of the jurisdiction in which such stockholder resides and payment by a U.S. bank in U.S. dollars before the expiration of the rights offering. If no notice is received by such time or the evidence presented is not satisfactory to us, the subscription rights represented thereby will expire.

No Revocation or Change

Once you submit the subscription rights certificate or have instructed your nominee regarding your subscription request, you are not allowed to revoke or change the exercise or request a refund of monies paid. All exercises of subscription rights are irrevocable, even if you learn information about us that you consider to be unfavorable. You should not exercise your subscription rights unless you are certain that you wish to purchase shares at the subscription price.

U.S. Federal Income Tax Treatment of Rights Distribution

For U.S. federal income tax purposes, we do not believe holders of shares of our common stock should recognize income or loss upon receipt or exercise of a subscription right. See “U.S. Federal Income Tax Considerations.”

No Recommendation to Rights Holders

Our board of directors is not making a recommendation regarding your exercise of the subscription rights. Stockholders who exercise subscription rights risk investment loss on money invested. We cannot predict the price at which our shares of common stock will trade during or after the rights offering. You should make your investment decision based on your assessment of our business and financial condition, our prospects for the future and the terms of this rights offering. Please see the section of this prospectus titled “*Risk Factors*,” and similarly titled sections in the documents incorporated by reference here, for a discussion of some of the risks involved in investing in our common stock.

Purchase Commitment

We have not entered into any back-stop or standby purchase arrangement or similar arrangement in connection with this rights offering.

Shares of Our Common Stock, Preferred Stock and Warrants Outstanding After the Rights Offering

Assuming no additional equity securities are issued by us prior to consummation of the rights offering, and assuming the rights offering is fully subscribed, upon completion of the rights offering, we will have

issued and outstanding 34,654,459 shares of common stock outstanding, 10,000 shares of preferred stock issued and outstanding, warrants to purchase additional shares of our common stock and the PIPE Warrants to purchase an aggregate of up to 13,180,000 shares of our common stock, based on 34,654,459 shares of our common stock outstanding as of August 9, 2023 (and assuming we do not issue additional shares of common stock). The exact number of shares of preferred stock and warrants that will be issued and outstanding after the rights offering will depend on the number of Units that are purchased in the rights offering. In addition to the foregoing, as of August 11, 2023, 1,946,615 shares of our common stock remain available for future issuance under our 2021 Incentive Award Plan, Director Deferred Compensation Plan and Employee Stock Purchase Plan.

Fees and Expenses

Neither we, nor the subscription agent, will charge a brokerage commission or a fee to subscription rights holders for exercising their rights. However, if you exercise your subscription rights through a custodian bank, broker, dealer or nominee, you will be responsible for any fees charged by your custodian bank, broker, dealer or nominee.

Listing

The subscription rights may not be sold, transferred, assigned or given away to anyone, and will not be listed for trading on any stock exchange or market. There is no established public trading market for the preferred stock or warrants and we do not expect one to develop. In addition, we do not intend to apply for listing of the preferred stock or warrants on any securities exchange or recognized trading system. The shares of our common stock are currently traded on the Nasdaq Capital Market under the symbol “MKUL.”

Other Matters

We are not making the rights offering in any state or other jurisdiction in which it is unlawful to do so, nor are we distributing or accepting any offers to purchase Units from subscription rights holders who are residents of those states or other jurisdictions or who are otherwise prohibited by federal or state laws or regulations from accepting or exercising the subscription rights. We may delay the commencement of the rights offering in those states or other jurisdictions, or change the terms of the rights offering, in whole or in part, in order to comply with the securities laws or other legal requirements of those states or other jurisdictions. Subject to state securities laws and regulations, we also have the discretion to delay allocation and distribution of any shares of preferred stock and warrants you may elect to purchase by exercise of your subscription rights in order to comply with state securities laws. We may decline to make modifications to the terms of the rights offering requested by those states or other jurisdictions, in which case, if you are a resident in those states or jurisdictions or if you are otherwise prohibited by federal or state laws or regulations from accepting or exercising the subscription rights, you will not be eligible to participate in the rights offering.

U.S. FEDERAL INCOME TAX CONSIDERATIONS

The following discussion is a summary of U.S. federal income tax considerations generally applicable to the receipt, exercise and expiration of the subscription rights received in the rights offering, the ownership and disposition of shares of our preferred stock and warrants received upon exercise of the subscription rights and common stock received on the conversion of such preferred stock or the exercise of such warrants (such subscription rights, common stock, preferred stock and warrants received on exercise of our subscription rights, collectively our “Securities”). This summary deals only with holders that hold our Securities as capital assets within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion is based on the existing provisions of the Code, the U.S. Treasury Regulations promulgated under the Code and administrative rulings and court decisions in effect as of the date of this prospectus, all of which are subject to change, possibly with retroactive effect, and any such change could affect the accuracy of the statements and conclusions set forth in this discussion.

This summary is not a complete description of all the tax consequences relevant to the receipt, ownership and disposition of our Securities and, in particular, does not address tax considerations applicable to investors subject to special rules, such as certain financial institutions, insurance companies, real estate investment trusts, regulated investment companies, U.S. expatriates or former long-term residents of the United States, U.S. Holders (as defined below) whose functional currency is not the U.S. dollar, dealers or traders, insurance companies, tax-exempt entities, persons holding their shares as part of a hedge, straddle, conversion, constructive sale or other integrated transaction including the constructive sale provisions of Section 1259 of the Code, holders that actually or constructively own 5% or more of our stock by vote or value, holders that treat their Securities as qualified small business stock for purposes of Sections 1045 and/or 1202 of the Code, holders who acquired their Securities in connection with stock option or stock purchase plans or in other compensatory transactions, and persons subject to the “applicable financial statement” tax accounting rules under Section 451(b) of the Code. It also does not address any U.S. state and local tax, U.S. federal non-income tax or non-U.S. tax considerations. It also does not address the alternative minimum tax or the Medicare tax on net investment income. The following discussion is intended only as a summary and does not purport to be a complete analysis or listing of all of the potential tax effects relevant to the receipt, ownership or disposition of our Securities.

As used herein, “holder” means a beneficial owner of our Securities (as applicable). “U.S. Holder” means a holder that is, for U.S. federal income tax purposes, (i) a citizen or individual resident of the United States, (ii) a corporation created or organized under the laws of the United States, any state thereof or the District of Columbia, (iii) a trust subject to the control of a U.S. person and the primary supervision of a U.S. court or (iv) an estate the income of which is subject to U.S. federal income tax without regard to its source. “Non-U.S. Holder” means a holder that is, for U.S. federal income tax purposes, an individual, a corporation, a trust or an estate that is not a U.S. Holder.

Partnerships (or other pass-through entities) holding our Securities, and partners (or other owners) in such partnerships (or other pass-through entities), should consult their own tax advisors about the U.S. federal income tax consequences to them of receiving our Securities.

EACH HOLDER OF OUR COMMON STOCK IS STRONGLY URGED TO CONSULT SUCH HOLDER’S OWN TAX ADVISORS REGARDING THE SPECIFIC FEDERAL, STATE, LOCAL AND NON-U.S. INCOME AND OTHER TAX CONSIDERATIONS OF THE RECEIPT AND EXERCISE OF THE SUBSCRIPTION RIGHTS AND THE OWNERSHIP AND DISPOSITION OF OUR PREFERRED STOCK AND WARRANTS ACQUIRED UPON EXERCISE OF THE SUBSCRIPTION RIGHTS, AND OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK RECEIVED ON THE EXERCISE OF OUR WARRANTS OR CONVERSION OF OUR PREFERRED STOCK.

Tax Considerations Applicable to U.S. Holders

Receipt of Subscription Rights

Although the authorities governing transactions such as the rights offering are complex and do not directly address consequences of certain aspects of the rights offering or the distribution of subscription rights and the effects of the over-subscription privilege, we do not believe the receipt of subscription rights

by a U.S. Holder pursuant to the rights offering should be treated as a taxable distribution with respect to such U.S. Holder's existing shares of our common stock for U.S. federal income tax purposes. Pursuant to Section 305(a) of the Code, in general, the receipt by a U.S. stockholder of a right to acquire stock should not be included in the taxable income of the recipient. The general rule of non-recognition in Section 305(a) of the Code is subject to certain exceptions in Section 305(b) of the Code, which include "disproportionate distributions." A disproportionate distribution is a distribution or a series of distributions, including deemed distributions, that has the effect of the receipt of cash or other property by some stockholders or holders of debt instruments convertible into stock and an increase in the proportionate interest of other stockholders in a corporation's assets or earnings and profits. We may have outstanding options and warrants (such as the PIPE Warrants) that could cause, under certain circumstances that cannot currently be predicted (such as a failure to properly adjust the option price in connection with a stock distribution), the receipt of subscription rights pursuant to this rights offering to be part of a disproportionate distribution, as contemplated in Section 305(b) of the Code.

Our position regarding the tax-free treatment of the subscription rights distribution is not binding on the IRS or the courts. If our tax position concerning the rights offering is finally determined by the IRS or a court to be incorrect, whether on the basis that the issuance of the subscription rights is a "disproportionate distribution" described above or otherwise, the fair market value of the subscription rights will be taxable to holders of our stock as a dividend to the extent of the holder's pro rata share of our current and accumulated earnings and profits, if any, for the taxable year in which the subscription rights are distributed. Any excess will be treated as a tax-free return of a holder's basis in our stock up to the amount of such basis with any additional amount treated as capital gain.

The following discussion assumes that the subscription rights issuance is a non-taxable distribution with respect to a U.S. Holder's existing shares of our stock for U.S. federal income tax purposes.

Tax Basis in the Subscription Rights

If the fair market value of the subscription rights a U.S. Holder receives is less than 15% of the fair market value of its existing shares of our stock (with respect to which the subscription rights are distributed) on the date the U.S. Holder receives the subscription rights, the subscription rights will be allocated a zero dollar basis for U.S. federal income tax purposes, unless the U.S. Holder elects to allocate its basis in its existing shares of our stock between its existing shares of our stock and the subscription rights in proportion to the relative fair market values of the existing shares of our stock and the subscription rights, determined on the date of receipt of the subscription rights. If a U.S. Holder chooses to allocate basis between its existing shares of our stock and the subscription rights, then such U.S. Holder must make this election on a statement included with its timely filed tax return (including extensions) for the taxable year in which such U.S. Holder receives the subscription rights. Such an election is irrevocable.

However, if the fair market value of the subscription rights received by a U.S. Holder is 15% or more of the fair market value of its existing shares of our stock on the date that such U.S. Holder receives the subscription rights, then such U.S. Holder must allocate its basis in its existing shares of our stock between those shares and the subscription rights received by the U.S. Holder in proportion to their fair market values determined on the date the U.S. Holder receives the subscription rights.

The fair market value of the subscription rights on the date that the subscription rights are distributed is uncertain, and we have not obtained, and do not intend to obtain, an appraisal of the fair market value of the subscription rights on that date.

Holders of our stock should consult with their own tax advisors regarding their tax basis in shares of our stock and subscription rights received.

Exercise of Subscription Rights

In general, a U.S. Holder will not recognize gain or loss upon the exercise of a subscription right acquired in the rights offering. A U.S. Holder's adjusted tax basis, if any, in the subscription right plus the subscription price should be allocated between the share of preferred stock and the warrant acquired upon exercise of the subscription right. Any tax basis in the stock upon which the subscription rights were

issued which is allocated to the subscription rights under the prior paragraph should be further allocated between the share of preferred stock and the warrant acquired upon exercise of the subscription right in proportion to their relative fair market values on the date the subscription rights were distributed. The subscription price should be allocated between the share of preferred stock and the warrant acquired upon exercise of the subscription right in proportion to their relative fair market values on the exercise date. These allocations establish the U.S. Holder's initial tax basis for U.S. federal income tax purposes in the shares of preferred stock and warrants received upon exercise of such U.S. Holder's subscription right. The holding period of a share of preferred stock or a warrant acquired upon exercise of a subscription right in the rights offering will begin on the date of exercise.

Expiration of Subscription Rights

If a U.S. Holder allows subscription rights received in the rights offering to expire, then such U.S. Holder should not recognize any gain or loss for U.S. federal income tax purposes. In such case, the U.S. Holder should re-allocate any portion of the tax basis in its existing stock previously allocated to the subscription rights that have expired to the existing stock.

Distributions on Preferred Stock or Common Stock

Distributions with respect to shares of our preferred stock or common stock will be taxable as dividend income to the extent of our current or accumulated earnings and profits as determined for U.S. federal income tax purpose.

Dividend income received by certain non-corporate holders with respect to shares of our preferred stock common stock will generally be "qualified dividends" subject to preferential rates of U.S. federal income tax, provided that the U.S. Holder meets applicable holding period and other requirements. Subject to similar exceptions, dividend income on our shares of preferred or common stock paid to holders that are domestic corporations will generally qualify for the dividends-received deduction. In addition, the dividends received deduction with respect to distributions may be subject to Section 1059 of the Code. Section 1059 of the Code requires a corporate U.S. Holder to reduce its adjusted tax basis in its stock on which it has received a dividend by the amount of the dividends received deduction resulting from any "extraordinary dividend." An extraordinary dividend for purposes of Section 1059 of the Code includes, among other items, a dividend that exceeds 5% of a U.S. Holder's adjusted basis in our preferred stock or 10% of its adjusted basis in our common stock.

To the extent that the amount of a distribution exceeds our current and accumulated earnings and profits, such distribution will be treated first as a tax-free return of capital to the extent of a holder's adjusted tax basis in such shares of our common stock and thereafter as capital gain.

Redemption Premium on Preferred Stock

If the redemption price of preferred stock exceeds its issue price by more than a de minimis threshold, such excess may be treated as a constructive distribution of additional stock that is included in income over the term of our preferred stock if either (i) the likelihood of a Deemed Liquidation Event is not considered remote, or (ii) the Company is more likely than not to exercise its rights to redeem our preferred stock, in each case, within the meaning of the regulations under Section 305 of the Code.

For these purposes, the redemption price at maturity will exceed the de minimis threshold, if it exceeds the product of (i) 1/4 of 1% of the redemption price at maturity and (ii) the number of complete years to maturity. Because our preferred stock does not have a stated maturity date, it is unclear how to calculate the de minimis threshold on our preferred stock.

The issue price of our preferred stock for United States federal income tax purposes will be equal to the amount of the subscription price that is allocated to our preferred stock as discussed above under "*Exercise of Subscription Rights*." It is possible that our preferred stock will be issued with more than a de minimis amount of redemption premium. Under Section 305(c) of the Code, such premium must be taken into account as a series of constructive distributions under principles similar to the principles of the original issue discount provisions of the Code (i.e., using a constant yield method over the term of our

preferred stock), in advance of receiving distributions attributable to such income. Because our preferred stock does not have a stated maturity date, the amounts and timing of such inclusions are uncertain.

The stated redemption price at maturity will generally equal the face amount of our preferred stock. While there is no authority directly on point, it is possible that the annual dividend yield on our preferred stock will be included in the stated redemption price at maturity, with the effect that U.S. Holders would be treated as constructively receiving a distribution in an amount equal to annual dividends payable on our preferred stock even if such amounts are not paid.

U.S. Holders should consult their tax advisors regarding whether they will be subject to constructive distributions on any redemption premium (including the annual dividend yield) on our preferred stock and how to determine the amount and timing of any such constructive distributions.

Constructive Distributions on Preferred Stock

The conversion rate of our preferred stock is subject to adjustment under certain circumstances. Section 305(c) of the Code and U.S. Treasury Regulations thereunder may treat a U.S. Holder of our preferred stock as having received a constructive distribution includable in such U.S. Holder's income in the manner as described above under "— Distributions on Preferred Stock or Common Stock," if and to the extent that certain adjustments in the conversion rate (or failures to make such an adjustment) increase the proportionate interest of such U.S. Holder in our earnings and profits. In certain other circumstances, an adjustment to the conversion rate of our preferred stock or a failure to make such an adjustment could potentially give rise to constructive distributions to U.S. Holders of our common stock. Thus, under certain circumstances, U.S. Holders may recognize income in the event of a constructive distribution even though they may not receive any cash or property.

Disposition of Common Stock or Preferred Stock

Subject to the discussion below with respect to Section 306 Stock, a U.S. Holder that sells or otherwise disposes of shares of common stock or preferred stock in a taxable transaction will generally recognize capital gain or loss equal to the difference between the amount realized and such U.S. Holder's adjusted tax basis in the shares. Such capital gain or loss will be long-term capital gain or loss if a U.S. Holder's holding period for such shares is more than one year at the time of disposition. Long-term capital gain of a non-corporate holder is generally taxed at preferential rates. The deductibility of capital losses is subject to limitations.

Section 306 Stock

In general, under Section 306 of the Code, if the receipt of the subscription rights is not taxable, preferred stock received on exercise of subscription rights may constitute "Section 306 stock" and be subject to special tax rules requiring recognition of ordinary income on a disposition of such stock, unless: (i) the Company does not have any current or accumulated earnings and profits for the current year, or (ii) U.S. Holders are able to establish to the satisfaction of the IRS that the distribution of subscription rights and subsequent disposition of preferred stock was not in pursuance of a plan having one of its principal purposes the avoidance of United States federal income tax. There can be no assurance, however, that any particular stockholder will be able to avoid Section 306 ordinary income treatment under these rules. Holders should consult their tax advisors regarding the availability of this exception to the ordinary income tax treatment under Section 306 of the Code with respect to their particular circumstances.

If preferred stock is subject to the rules applicable to Section 306 stock, the amount realized by a U.S. Holder upon a disposition of such preferred stock (other than (i) a redemption, which is discussed below, or (ii) a disposition resulting in a complete termination of a U.S. Holder's entire actual and constructive stock ownership interest in the Company, which is discussed below) will be treated as ordinary income (and will not be offset by such U.S. Holder's adjusted tax basis in such stock), but only to the extent that such amount does not exceed the amount which would have been treated as a dividend if at the time of the receipt of the subscription rights, if the Company were to have distributed cash in an amount equal to the fair market value of the subscription rights as of the date of their distribution (if you are a non-corporate U.S. Holder, such ordinary income will be treated as a dividend for purposes of applying the lower rate of taxation applicable to long-term capital gains (see discussion above under "— Distributions on Preferred Stock or

Common Stock)). Any excess of the amount realized over the sum of (i) the amount treated as ordinary income upon disposition plus (ii) the adjusted tax basis in such stock, will be treated as a capital gain. No loss will be recognized upon a disposition of Section 306 stock. A U.S. Holder's adjusted tax basis in shares of preferred stock that has been disposed of that is not used to offset any amount realized from such disposition under the foregoing rules will generally be added to the adjusted tax basis of any common stock actually owned by such U.S. Holder. However, if a disposition (other than a redemption) of Section 306 stock terminates a U.S. Holder's entire actual and constructive stock ownership interest in the Company, the foregoing rules will not apply and such U.S. Holder will be subject to the treatment described in "*Disposition of Common and Preferred Stock*" above such disposition will not give rise to ordinary income, and loss may be recognized.

If our preferred stock constitutes Section 306 stock, the amount realized by a U.S. Holder in redemption of such stock will not be offset by such U.S. Holder's adjusted tax basis in such stock and will result in dividend income to the extent of our then available earnings and profits, unless the redemption complete termination of a U.S. Holder's entire actual and constructive stock ownership interest in the Company or is a redemption in partial or complete liquidation of the Company. Corporations may be eligible for a dividends-received deduction for amounts received that are treated as a dividend under these rules (see discussion above under "*Distributions on Preferred Stock or Common Stock*"). The law is unclear as to the treatment of any unused tax basis in preferred stock if the redemption of such stock results in dividend income treatment to a U.S. Holder. U.S. Holders should consult their tax advisors regarding any such unused tax basis.

Conversion of Our Preferred Stock into Our Common Stock

A U.S. Holder will generally not recognize any gain or loss in respect of the receipt of our common stock upon the conversion of our preferred stock (except to the extent the U.S. Holder receives a cash payment for any fractional share that would otherwise have been issuable upon conversion of our preferred stock). The adjusted tax basis of our common stock that a U.S. Holder receives on conversion will equal the adjusted tax basis of our preferred stock converted (decreased by the adjusted tax basis allocable to any fractional share that would otherwise have been issuance upon conversion of our preferred stock), and the holding period of such common stock received on conversion will include the period during which the U.S. Holder held our preferred stock prior to conversion.

If a conversion occurs when there is a dividend arrearage on our preferred stock and the fair market value of our common stock exceeds the issue price of the preferred stock, a portion of the common stock received might be treated as a dividend distribution taxable as ordinary income.

In the event a U.S. Holder's preferred stock is converted pursuant to an election by such U.S. Holder in the case of certain acquisitions or fundamental changes or pursuant to certain other transactions (including our consolidation or merger into another person), the tax treatment of such a conversion will depend upon the facts underlying the particular transaction triggering such a conversion. In this regard, it is possible that any related adjustments of the conversion rate would be treated as a constructive distribution to the U.S. Holder as described below under "*Constructive Dividends on Preferred Stock or Common Stock*." U.S. Holders should consult their own tax advisors to determine the specific tax treatment of a conversion under such circumstances. Any common stock received on a conversion of preferred stock will not be considered Section 306 stock.

Constructive Distributions on Warrants

As described in the section entitled "Dividend Policy," we do not anticipate declaring or paying dividends to holders of our stock the foreseeable future. However, if at any time during the period in which a U.S. Holder holds warrants, we were to pay to holders of our common stock distributions of cash, property, or rights or warrants to subscribe for or purchase any security other than our common stock, the exercise price of the warrants will be adjusted. Any such adjustments in respect of such distributions of cash or property will result in a deemed distribution to U.S. Holders of our warrants. In addition, the exercise price of our warrants will also be adjusted in the event there are stock dividends, stock splits (including reverse stock splits) and rights offerings with respect to our common stock. It is possible that these adjustments may also result in a deemed distribution in respect of our warrants. Any such deemed distributions should

generally be treated as described above in “*Distributions on Common Stock*.” U.S. Holders should generally increase their basis in their warrants by the amount of any taxable distributions that are treated as a dividend. U.S. Holders should consult their tax advisors regarding whether any adjustments to the exercise price of our warrants will result in a constructive distribution.

Disposition, Exercise or Expiration of Warrants

Upon the sale or other taxable disposition of a warrant (other than by exercise) received upon exercise of a subscription right, a U.S. Holder will generally recognize capital gain or loss equal to the difference between the amount realized on the sale or other taxable disposition and the U.S. Holder’s adjusted tax basis in the warrant. A U.S. Holder’s adjusted tax basis in a warrant will generally equal its initial tax basis (discussed above under “— Exercise of Subscription Rights”), as adjusted for any constructive dividends on the warrant discussed above. Such capital gain or loss will be long-term capital gain or loss if the U.S. Holder’s holding period in such warrant is more than one year at the time of the sale or other taxable disposition. Long-term capital gain of a non-corporate holder is generally taxed at preferential rates. The deductibility of capital losses is subject to certain limitations.

A U.S. Holder will not be required to recognize income, gain or loss upon exercise of a warrant received upon exercise of a subscription right. A U.S. Holder’s tax basis in a share of our common stock received upon exercise of the warrants for cash will be equal to the sum of (1) the U.S. Holder’s tax basis in the warrants exchanged therefor and (2) the exercise price of such warrants. A U.S. Holder’s holding period in the shares of our common stock received upon exercise will commence on the day after such U.S. Holder exercises the warrants.

In certain circumstances, the warrants will be exercisable on a cashless basis. The U.S. federal income tax treatment of an exercise of a warrant on a cashless basis is not clear, and could differ from the consequences described above. It is possible that a cashless exercise could be a taxable event. U.S. Holders are urged to consult their tax advisors as to the consequences of an exercise of a warrant on a cashless basis, including with respect to whether the exercise is a taxable event, and their holding period and tax basis in our common stock received.

If a warrant expires without being exercised, a U.S. Holder will recognize a capital loss in an amount equal to such holder’s adjusted tax basis in the warrant. Such loss will be long-term capital loss if, at the time of the expiration, the U.S. Holder’s holding period in such warrant is more than one year. The deductibility of capital losses is subject to certain limitations.

Information Reporting and Backup Withholding

In general, information reporting requirements may apply to dividends, sales proceeds in respect of our Securities or other amounts paid to U.S. Holders, unless an exemption applies. Backup withholding tax may apply to amounts subject to reporting if the holder fails to provide an accurate taxpayer identification number or fails to report all interest and dividends required to be shown on its U.S. federal income tax returns. A U.S. Holder can claim a credit against its U.S. federal income tax liability for the amount of any backup withholding tax and a refund of any excess, provided that all required information is timely provided to the IRS. U.S. Holders should consult their tax advisors as to their qualification for exemption from backup withholding and the procedure for establishing an exemption.

Tax Considerations Applicable to Non-U.S. Holders

Receipt, Exercise and Expiration of the Subscription Rights

As noted above, this discussion assumes that the subscription rights issuance is a nontaxable distribution. See “— Tax Considerations Applicable to U.S. Holders — Receipt of Subscription Rights” above. In such case, non-U.S. Holders will not be subject to U.S. federal income tax (including withholding tax) on the receipt, exercise or expiration of the subscription rights.

Distributions on Preferred Stock and Common Stock

Distributions on preferred stock and common stock that are characterized as dividends paid to a Non-U.S. Holder will generally be subject to withholding of U.S. federal tax at a 30% rate or such lower

rate as may be provided by an applicable income tax treaty. To receive the benefit of a reduced treaty rate, a Non-U.S. Holder must furnish to the Company or its paying agent a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or applicable successor form) certifying such holder's qualification for the reduced rate. This certification must be provided to the Company or its paying agent prior to the payment of dividends and must be updated periodically. If a Non-U.S. Holder qualifies for a reduced treaty rate but does not timely provide the Company or the payment agent with the required certification, such Non-U.S. Holder may be entitled to a credit against their U.S. federal income tax liability or a refund of the tax withheld, which the Non-U.S. Holder may claim by filing the appropriate claim for refund with the IRS.

Dividends that are treated as "effectively connected" with a trade or business conducted by a Non-U.S. Holder within the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base of the Non-U.S. Holder within the United States) are not subject to the withholding tax, provided the Non-U.S. Holder satisfies certain certification and disclosure requirements. Instead, such dividends, net of specified deductions and credits, are taxed at the same graduated U.S. federal income tax rates applicable to U.S. persons. To the extent a dividend is effectively connected with a U.S. trade or business, non-corporate Non-U.S. Holders may be eligible for taxation at reduced U.S. federal tax rates applicable to qualified dividend income. Any such effectively connected dividends received by a Non-U.S. Holder that is a corporation may, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as specified by an applicable income tax treaty.

Redemption Premium on Preferred Stock

As discussed above with respect to U.S. Holders, redemption premium or unpaid annual dividends on preferred stock may be treated as constructive distributions. See the discussion above under "*— Tax Considerations Applicable to U.S. Holders — Redemption Premium on Preferred Stock.*" If such amounts are treated as constructive distributions to non-U.S. Holders, to the extent such amounts are treated as dividends, Non-U.S. Holders will be subject to tax consequences generally similar to those discussed above under "*— Distributions on Preferred Stock and Common Stock.*" If Non-U.S. Holders receive constructive dividends on our preferred stock, it is possible that U.S. federal tax on the constructive dividend would be withheld, if applicable, from subsequent cash payments on our preferred stock.

Disposition of our Securities

Subject to the discussions below on Section 306 stock, backup withholding and FATCA (as defined below), a Non-U.S. Holder will generally not be subject to any U.S. federal income tax or withholding tax on any gain realized upon such holder's sale or other disposition of our Securities, unless:

- the gain is effectively connected with a trade or business of the Non-U.S. Holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base of the Non-U.S. Holder within the United States),
- the Non-U.S. Holder that is an individual who is present in the United States for 183 days or more in the taxable year of the disposition and meets certain other requirements, or
- the Company is, or has been a "United States real property holding corporation" (a "USRPHC") for U.S. federal income tax purposes at any time during the shorter of the five-year period ending on the date of disposition or the period that the Non-U.S. Holder held our Securities.

Gain that is effectively connected with conduct of a trade or business within the United States (and, if an income tax treaty applies, is attributable to a permanent establishment within the United States) will generally be subject to U.S. federal income tax, net of certain deductions at the same rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation may also be subject to a "branch profits tax" of 30% with respect to such gain (or a lower rate prescribed in an applicable tax treaty).

The Company believes that it is not currently, and has not been at any time, a USRPHC. However, the Company has not undertaken any formal analysis as to its past or present USRPHC status, and no assurance can be given that it is not, nor will it become a USRPHC in the future. Non-U.S. Holders should consult their tax advisors regarding the consequences to them if we are or become a USRPHC.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Section 306 Stock

As discussed above with respect to U.S. Holders, if our preferred stock is considered Section 306 stock, holders may be required to recognize dividend income upon certain dispositions of our preferred stock. See the discussion above under “— *Tax Considerations Applicable to U.S. Holders — Section 306 Stock.*” If a Non-U.S. Holder is required to treat an amount on disposition of our preferred stock as a dividend, such Non-U.S. Holder will generally be subject to the consequences described under “— *Distributions on Preferred Stock and Common Stock.*”

Conversion of Our Preferred Stock into Our Common Stock

A Non-U.S. Holder will generally not recognize any gain or loss in respect of the receipt of our common stock upon the conversion of our preferred stock (except to the extent the non-U.S. Holder receives a cash payment for any fractional share that would otherwise have been issuable upon conversion of our preferred stock). If our preferred stock is considered Section 306 stock, any common stock received will not be considered Section 306 stock.

If a conversion occurs when there is a dividend arrearage on our preferred stock and the fair market value of our common stock exceeds the issue price of the preferred stock, a portion of the common stock received might be treated as a dividend distribution generally taxable as discussed above under “— *Tax Considerations Applicable to Non-U.S. Holders — Distributions on Preferred Stock and Common Stock.*”

Constructive Distributions on Preferred Stock

As described above under “— *Tax Considerations Applicable to U.S. Holders — Constructive Dividends on Preferred Stock,*” in certain circumstances, a non-U.S. Holder will be deemed to receive a constructive distribution from us. Adjustments in the conversion rate (or failures to adjust the conversion rate) that increase the proportionate interest of a non-U.S. Holder in our earnings and profits could result in constructive distributions to the non-U.S. Holder that are treated as dividends for U.S. federal income tax purposes. Any constructive dividend deemed paid to a non-U.S. Holder will generally be subject to U.S. federal income tax or withholding tax in the manner described above under “— *Tax Considerations Applicable to Non-U.S. Holders — Distributions on Preferred Stock and Common Stock.*” It is possible that U.S. federal tax on the constructive dividend would be withheld, if applicable, from subsequent payments on our preferred stock or our common stock.

Constructive Distributions on Warrants

As described in the section entitled “*Dividend Policy,*” we do not anticipate declaring or paying dividends to holders of our stock the foreseeable future. However, if at any time during the period in which a Non-U.S. Holder holds warrants, we were to pay distributions of cash, property, or rights or warrants to subscribe for or purchase any security other than our common stock, the exercise price of the warrants will be adjusted. Any such adjustments in respect of distributions of cash or property will result in a deemed distribution to Non-U.S. Holders of our warrants. In addition, the exercise price of our warrants will also be adjusted in the event there are stock dividends, stock splits (including reverse stock splits) and rights offerings with respect to our common stock. It is possible that these adjustments may also result in a deemed distribution in respect of our warrants. Any such deemed distributions should generally be treated as described above in “*Distributions on Common Stock.*” Non-U.S. Holders should generally increase their basis in their warrants by the amount of any taxable distributions that are treated as a dividend. Non-U.S. Holders should consult their tax advisors regarding whether any adjustments to the exercise price of our warrants will result in a constructive distribution.

Exercise of or Expiration of Warrants

In general, a Non-U.S. Holder will not be subject to U.S. federal income tax on the exercise of warrants into shares of our common stock. As discussed above in “— *Tax Considerations Applicable to U.S.*”

Holders — Disposition, Exercise or Expiration of Warrants,” the U.S. federal income tax treatment of an exercise of a warrant on a cashless basis is not clear. Non-U.S. Holders will generally not be subject to U.S. federal income tax with respect to a cashless exercise of a warrant, even if such exercise is treated as a taxable exchange for such purposes, unless such Non-U.S. Holder is subject to any of the rules or circumstances described in “— Sale or Other Disposition of Our Securities” below (as applied to the Warrants), in which case such Non-U.S. Holder will generally be subject to U.S. federal income tax as described therein. Non-U.S. Holders are urged to consult their tax advisors as to the consequences of an exercise of a warrant on a cashless basis, including with respect to whether the exercise is a taxable event, and their holding period and tax basis in our common stock received.

If a warrant expires without being exercised, a Non-U.S. Holder will recognize a capital loss in an amount equal to such holder’s adjusted tax basis in the warrant. Such loss will be long-term capital loss if, at the time of the expiration, the U.S. Holder’s holding period in such warrant is more than one year. The deductibility of capital losses is subject to certain limitations. If a Non-U.S. Holder is not subject to U.S. net income tax, such Non-U.S. Holder will not be able to use any such loss.

Information Reporting and Backup Withholding

In general, information reporting requirements may apply to dividends, sales proceeds in respect of our Securities or other amounts paid to Non-U.S. Holders, unless an exemption applies. Backup withholding tax may apply to amounts subject to reporting if the holder fails to provide an accurate taxpayer identification number or fails to report all interest and dividends required to be shown on its U.S. federal income tax returns. A Non-U.S. Holder can claim a credit against its U.S. federal income tax liability for the amount of any backup withholding tax and a refund of any excess, provided that all required information is timely provided to the IRS. Non-U.S. Holders should consult their tax advisors as to their qualification for exemption from backup withholding and the procedure for establishing an exemption.

Additional Withholding Tax on Payments Made to Foreign Accounts

Sections 1471-1474 of the U.S. Internal Revenue Code (commonly known as “FATCA”) impose a 30% withholding tax on certain types of payments (including dividends by the Company) made to “foreign financial institutions” and certain other non-U.S. entities unless (i) the foreign financial institution undertakes certain diligence and reporting obligations or (ii) the foreign non-financial entity either certifies it does not have any substantial U.S. owners or furnishes identifying information regarding each substantial U.S. owner. If any payee, whether or not it is a beneficial owner or an intermediary with respect to a payment, is a foreign financial institution that is not subject to special treatment under certain intergovernmental agreements, it must enter into an agreement with the U.S. Treasury requiring, among other things, that it undertakes to identify accounts held by certain U.S. persons or U.S.-owned foreign entities, annually report certain information about such accounts, and withhold 30% on payments to account holders whose actions prevent them from complying with these reporting or other requirements. Withholding under this legislation on withholdable payments to foreign financial institutions and certain non-financial foreign entities will also apply to the gross proceeds of a disposition of our Securities (which will include sales, redemptions and returns on capital). However, proposed regulations on which taxpayers may rely suspend this withholding requirement in respect of gross proceeds until final regulations are published. Failure by a Non-U.S. Holder (or any non-U.S. intermediary through which it will hold its stock) that is subject to FATCA to comply with its certification and reporting requirements, or properly document its status as a person not subject to FATCA withholding, could result in withholding at a rate of 30% on withholdable payments made to the Non-U.S. Holder. Non-U.S. Holders owning our Securities through a non-U.S. intermediary should consult their tax advisors regarding this legislation.

AS INDICATED ABOVE, THE FOREGOING DISCUSSION IS FOR GENERAL INFORMATION PURPOSES ONLY AND SHOULD NOT BE VIEWED AS TAX ADVICE. HOLDERS RECEIVING A DISTRIBUTION OF SUBSCRIPTION RIGHTS CONTEMPLATED IN THIS RIGHTS OFFERING AND HOLDERS CONSIDERING THE ACQUISITION OF OUR PREFERRED STOCK AND WARRANTS BY EXERCISING SUCH SUBSCRIPTION RIGHTS ARE URGED TO CONSULT THEIR OWN TAX ADVISORS REGARDING THE APPLICATION OF THE U.S. FEDERAL TAX LAWS TO THEIR PARTICULAR SITUATIONS AND THE APPLICABILITY AND EFFECT OF STATE, LOCAL AND NON-U.S. LAWS TO THEM.

DESCRIPTION OF CAPITAL STOCK

The following summary of the material terms of our securities is not intended to be a complete description of all of the rights and preferences of such securities. Because it is only a summary, it does not contain all of the information that may be important to you, and is qualified by reference to our amended and restated certificate of incorporation, as amended, our amended and restated bylaws, the Certificate of Designation, the form of common stock purchase warrant and the form of warrant agency agreement (together with the form of common stock purchase agreement, the "Warrant Agreement"), which are exhibits to the registration statement of which this prospectus is a part. We urge you to read each of the aforementioned documents in their entirety for a complete description of the rights and preferences of our securities.

General

Our authorized capital stock consists of 110,000,000 shares of common stock, \$0.01 par value per share, and 11,000,000 shares of preferred stock, \$0.01 par value per share.

Common Stock

Dividend Rights

Subject to the rights, if any, of the holders of any outstanding series of the Company's preferred stock, holders of the Company's common stock will be entitled to receive dividends out of any of its funds legally available when, as and if declared by the board of directors.

Voting Rights

Each holder of the Company's common stock is entitled to one vote per share on all matters on which stockholders are generally entitled to vote. The Company's certificate of incorporation does not provide for cumulative voting in the election of directors.

Liquidation

If the Company liquidates, dissolves or winds up its affairs, holders of its common stock are entitled to share proportionately in the Company's assets available for distributions to stockholders, subject to the rights, if any, of the holders of any outstanding series of the Company's preferred stock.

Other Rights

Holders of the Company's common stock have no preemptive, subscription, redemption or conversion rights.

Preferred Stock

Under the Company's certificate of incorporation and subject to the limitations prescribed by law, the Board may issue the Company's preferred stock in one or more series and may establish from time to time the number of shares to be included in such series and may fix the designation, the voting powers, if any, and preferences and relative participating, optional or other rights, if any, of the shares of each such series and any qualifications, limitations or restrictions thereof. When and if the Company issues any shares of preferred stock, the Board will establish the number of shares and designation of such series and the voting powers, if any, and preferences and relative participating, optional or other special rights, and the qualifications, limitations and restrictions thereof, for the particular preferred stock series. If the rights offering is consummated, we expect to designate 10,000 shares of preferred stock.

Preferred Stock Included in the Units Issuable in the Rights Offering

We will authorize the preferred stock by filing a certificate of designation with the Secretary of State of Delaware. The certificate of designation may be authorized by our board without approval by our stockholders.

Ranking. The preferred stock will rank senior to all junior securities with respect to payment of dividends and distribution of assets or consideration upon our liquidation, dissolution or winding up, whether voluntary or involuntary, or upon a Deemed Liquidation Event (as defined in the Certificate of Designation). For purposes of our Certificate of Designation, “junior securities” means collectively, our common stock and any other class of equity securities that we may issue in the future.

Dividends. On an annual basis, our board of directors may, at its sole discretion, cause a dividend with respect to the preferred stock to be declared and paid in cash to the holders in an amount equal to 12% of the liquidation preference as in effect at such time (initially \$1,000 per share). Such cash dividends may be paid only when, as and if declared by our board of directors, out of assets legally available therefor. If the dividend is not so declared and paid in cash, the liquidation preference will be adjusted and increased annually by an amount equal to 12% of the liquidation preference per share as in effect at such time, that is not paid in cash to the holders on such date. The initial dividend payments for the period of time between the initial issuance date and the first dividend payment date, if applicable, will be prorated.

All accrued and accumulated dividends on the preferred stock will be paid prior to, and in preference to, any dividend on any securities ranking junior to the preferred stock, including the common stock, and will be fully declared and paid before any dividends are declared and paid, or any other distributions or redemptions are made, on any junior securities; *provided that*, we will be permitted to declare or pay any dividend or distribution payable on the shares of our common stock in shares of common stock. As our common stock ranks junior to the preferred stock, unless full dividends have been paid, or set aside for payment on all outstanding preferred stock for all dividends or increases in the liquidation value in excess of the initial liquidation amount of \$1,000, no cash dividends may be declared or paid on our common stock otherwise.

Liquidation Preference; Certain Mergers, Consolidations and Assets Sales. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, the holders of shares of the preferred stock then outstanding shall be entitled to be paid out of the assets of the Company available for distribution to its stockholders and, in the event of a Deemed Liquidation Event (as defined in the Certificate of Designation), the holders of shares of the preferred stock then outstanding shall be entitled to be paid out of the consideration payable to stockholders in such Deemed Liquidation Event or out of the consideration received by the Company for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by our board of directors), together with any other assets of the Company available for distribution to its stockholders, all to the extent permitted by Delaware law governing distributions to stockholders, as applicable, before any payment shall be made to the holders of common stock by reason of their ownership thereof, an amount per share equal to the greater of (i) the liquidation preference per share of preferred stock *plus* any dividends accrued and accumulated but unpaid thereon, whether or not declared and (ii) such amount per share as would have been payable had all shares of preferred stock been converted into common stock immediately prior to such liquidation, dissolution, winding up or Deemed Liquidation Event (such amount, the “Preferred Stock Liquidation Amount”). If upon any such liquidation, dissolution or winding up of the Company or Deemed Liquidation Event, the assets of the Company available for distribution to its stockholders shall be insufficient to pay the holders of shares of preferred stock the Preferred Stock Liquidation Amount, the holders of shares of preferred stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company or Deemed Liquidation Event, after payment of the aggregate Preferred Stock Liquidation Amount due to the holders of the preferred stock, the remaining assets of the Company or consideration payable in any applicable Deemed Liquidation Event available for distribution to its stockholders will be distributed among the holders of our common stock pro rata based on the number of shares held by each holder.

Redemption. We may redeem any or all of the preferred stock at any time and from time to time at our option, by giving notice (by issuing a press release or otherwise making a public announcement, by mailing a notice of redemption or otherwise). There is no prohibition on the repurchase or redemption of preferred stock while there is any arrearage in the payment of dividends. If we redeem fewer than all of the outstanding shares of preferred stock, we may select the shares to be redeemed by redeeming shares proportionally, by lot, or by any other equitable method.

The redemption price for any shares of the preferred stock will be an amount equal to the \$1,000 stated value per share plus any accrued and accumulated dividends, whether or not declared, to the date fixed for redemption. From and after any applicable redemption date, if funds necessary for the redemption are available and have been irrevocably deposited or set aside, then:

- the shares will no longer be deemed outstanding;
- the holders of the shares, as such, will cease to be stockholders; and
- all rights with respect to the preferred stock will terminate except the right of the holders to receive the redemption price, without interest.

There will not be any sinking fund for the preferred stock.

Voting Rights. Except as otherwise provided in the Certificate of Designation or as otherwise required by law, the preferred stock has no voting rights.

Conversion. Each share of preferred stock will be convertible at the option of the holder at any time, into the number of shares of our common stock determined by dividing (i) the \$1,000 stated value per share of the preferred stock plus any accrued and accumulated dividends by (ii) a conversion price of \$ per share. In addition, the conversion price per share is subject to adjustment for stock dividends, distributions, subdivisions, combinations or reclassifications. Subject to limited exceptions (including waiver of this limitation by our board of directors), a holder of the preferred stock will not have the right to convert any portion of the preferred stock to the extent that, after giving effect to such conversion, the holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to its conversion.

Forced Conversion. Notwithstanding anything herein to the contrary, at such time that the volume-weighted average price of our common stock exceeds 300% of the conversion price of our preferred stock during any 20 of 30 consecutive trading days, we have the right to force the conversion of our preferred stock into common stock.

Amendment and Waiver. No provision of the Certificate of Designation governing the preferred stock may be amended, modified or waived without the affirmative vote of the holders of a majority of the outstanding preferred stock, voting separately as a class, and any such written amendment, modification or waiver will be binding upon us and each holder of the preferred stock.

We are prohibited from amending, modifying or waiving the terms or relative priorities of the preferred stock through a merger, consolidation or other transaction with another entity unless we have obtained the prior written consent of the holders of the preferred stock.

Warrants Included in Units Issuable in Rights Offering

The warrants to be issued as a part of this rights offering will be separately transferable following their issuance and through their expiration five years from the date of issuance. Each warrant will entitle the holder to purchase shares of our common stock at an exercise price of \$ per share from the date of issuance through its expiration. There is no public trading market for the warrants and we do not intend that they will be listed for trading on Nasdaq Capital Market or any other securities exchange or market. The common stock underlying the warrants, upon issuance, will also be traded on Nasdaq Capital Market under the symbol "MKUL."

All warrants that are purchased in the rights offering as part of the Units will be issued in book-entry, or uncertificated, form meaning that you will receive a DRS from our transfer agent reflecting ownership of warrants if you are a holder of record. The subscription agent will arrange for the issuance of the warrants as soon as practicable after the closing. At closing, all prorating calculations and reductions contemplated by the terms of the rights offering will have been effected and payment to us for the subscribed-for Units will have cleared. If you hold your shares of common stock in the name of a bank, broker, dealer, or other nominee, DTC will credit your account with your nominee with the warrants you purchased in the rights offering. The warrants will be issued pursuant to a warrant agent agreement by and between us and Computershare, the warrant agent.

Exercisability

Each warrant will be exercisable at any time and will expire five years from the date of issuance. The warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and payment in full for the number of shares of our common stock purchased upon such exercise. The number of shares of common stock issuable upon exercise of the warrants is subject to adjustment in certain circumstances, including a stock split of, stock dividend on, or a subdivision, combination or recapitalization of the common stock. See also “— *Fundamental Transactions*” below.

Cashless Exercise

If at any time there is no effective registration statement registering, or the prospectus contained therein is not available for issuance of, the shares of common stock issuable upon exercise of the warrants, the holder may exercise its warrants on a cashless basis. When exercised on a cashless basis, a portion of the warrant is cancelled in payment of the purchase price payable in respect of the number of shares of our common stock purchasable upon such exercise.

Exercise Price

Each warrant represents the right to purchase _____ shares of common stock at an exercise price of \$ _____ per share. In addition, the exercise price per share is subject to adjustment for stock dividends, distributions, subdivisions, combinations, or reclassifications, as well as certain rights offerings and pro rata distributions made to all holders of our common stock. Subject to limited exceptions (and waiver of the limitation in the sole discretion of our board of directors), a holder of warrants will not have the right to exercise any portion of the warrant to the extent that, after giving effect to the exercise, the holder, together with its affiliates, and any other person acting as a group together with the holder or any of its affiliates, would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to its exercise.

Fundamental Transactions

If, at any time while the warrants are outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company (or any Subsidiary), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding common stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the common stock or any compulsory share exchange pursuant to which the common stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group (as defined in Section 13(d) of the Exchange Act) of Persons whereby such other Person or group (as defined in Section 13(d) of the Exchange Act) acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of the warrants, the holders will receive, for each share of common stock that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction (without regard to any beneficial ownership limitation on the exercise of the warrants), the number of shares of common stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (as determined in accordance with the Warrant Agreement) receivable as a result of such Fundamental Transaction by a holder of the number of shares of common stock for which the warrants are exercisable immediately prior to such Fundamental Transaction (without regard

to any beneficial ownership limitation on the exercise of the warrants), as adjusted in accordance with provisions of the Warrant Agreement.

For purposes of the foregoing paragraph, “Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

In the event of a Fundamental Transaction, the Company or any successor entity shall, at the option of the holders of the preferred stock, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase the warrants from the such holders by paying an amount of cash equal to the Black Scholes Value (as defined in the Warrant Agreement) of the remaining unexercised portion of the warrants on the date of the consummation of such Fundamental Transaction (subject to certain provisos set forth in the Warrant Agreement).

Transferability

Subject to applicable laws and restrictions, a holder may transfer a warrant upon surrender of the warrant to us with a completed and signed assignment in the form attached to the warrant. The transferring holder will be responsible for any tax that liability that may arise as a result of the transfer.

Rights as Stockholder

Except as set forth in the warrant, the holder of a warrant, solely in such holder’s capacity as a holder of a warrant, will not be entitled to vote, to receive dividends, or to any of the other rights of our stockholders.

Amendments and Waivers

The Warrant Agreement may be amended by the parties thereto without the consent of any warrant holder for the purpose of curing any ambiguity, or curing, correcting or supplementing any defective provision contained herein or adding or changing any other provisions with respect to matters or questions arising under the Warrant Agreement as the parties may deem necessary or desirable and that the parties deem shall not adversely affect the interest of the warrant holders. All other modifications or amendments, including any amendment to increase the exercise price or shorten the exercise period of the warrants, shall require the vote or written consent of the holders of a majority of the then outstanding warrants.

Anti-Takeover Effects of Provisions of our Certificate of Incorporation and Bylaws

Our certificate of incorporation, as amended, and bylaws contain, and Delaware statutory law contains, provisions that could make the acquisition of the Company by means of a tender offer, a proxy contest or otherwise more difficult. These provisions are expected to discourage certain types of coercive takeover practices and takeover bids that our board of directors may consider inadequate and to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of increased protection of our ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging takeover or acquisition proposals because, among other things, negotiation of these proposals could result in an improvement of their terms. The description set forth below is only a summary and is qualified in its entirety by reference to our certificate of incorporation and our bylaws, both of which are filed as exhibits to our offering statement of which this offering circular forms a part.

Number of Directors; Filling Vacancies; Removal

Our certificate of incorporation and bylaws, in each case as amended from time to time, provide that our business and affairs will be managed by or under the direction of our board of directors. Our certificate of incorporation and bylaws provide that the board of directors will consist of not less than three nor more than nine members, with the exact number of directors within these limits to be fixed exclusively by the board of directors. In addition, our certificate of incorporation provides that any board vacancy, including

a vacancy resulting from an increase in the number of directors, may be filled solely by the affirmative vote of a majority of the remaining directors then in office, even if less than a quorum of the board, or by the sole remaining director.

Special Meetings

Our certificate of incorporation and bylaws provide that special meetings of the stockholders may only be called by our board of directors or certain of our officers. These provisions will make it more difficult for stockholders to take an action opposed by our board of directors.

No Stockholder Action by Written Consent Unless Approved by Our Board

Our certificate of incorporation and bylaws require that all actions to be taken by stockholders must be taken at a duly called annual or special meeting, and stockholders will not be permitted to act by written consent unless both the action and the taking of the action by written consent are approved in advance by our board of directors. These provisions may make it more difficult for stockholders to take an action opposed by our board of directors.

Amendments to Our Certificate of Incorporation

Our certificate of incorporation provides that the affirmative vote of the holders of at least 66 2/3% of the total voting power of the then-outstanding shares of common stock entitled to vote, voting as a single class, is required to amend or repeal, or adopt any provision inconsistent with, certain provisions in our certificate of incorporation, including those provisions regarding the filling of vacancies on the board of directors, provisions providing for the removal of directors, provisions regarding the calling of special meetings, provisions regarding stockholder action by written consent and provisions regarding amendment of our certificate of incorporation. These provisions may make it more difficult for stockholders to make changes to our certificate of incorporation.

Amendments to Our Bylaws

Our certificate of incorporation provides that our board of directors has the power to adopt, amend or repeal the bylaws. Any such adoption, amendment or repeal of our bylaws by the board of directors shall require approval of a majority of the entire board. Our certificate of incorporation provides that, notwithstanding any other provision of our certificate of incorporation, the affirmative vote of the holders of at least 66 2/3% of the total voting power of the then-outstanding shares of common stock entitled to vote, voting as a single class, is required for our stockholders to amend or repeal, or adopt any provisions in the bylaws. These provisions may make it more difficult for stockholders to make changes to our bylaws that are opposed by our board of directors.

Requirements for Advance Notification of Stockholder Nomination and Proposals

Under our bylaws, stockholders of record may nominate persons for election to our board of directors or bring other business constituting a proper matter for stockholder action at annual meetings only by providing proper notice to our secretary. Proper notice must be generally received not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year (or, in some cases, prior to the tenth day following the announcement of the meeting) and must include, among other information, the name and address of the stockholder giving the notice, certain information relating to each person whom such stockholder proposes to nominate for election as a director and a brief description of any business such stockholder proposes to bring before the meeting. Nothing in our bylaws may be deemed to affect any rights of stockholders to request inclusion of proposals in our proxy statement pursuant to Rule 14a-8 under the Exchange Act. Contests for the election of directors or the consideration of stockholder proposals will be precluded if the proper procedures are not followed. Third parties may therefore be discouraged from conducting a solicitation of proxies to elect their own slate of directors or to approve their own proposals.

Forum and Venue

Our bylaws provide that, unless we otherwise consent in writing to the selection of an alternative forum, the sole and exclusive forum for certain legal actions involving the Company will be the Court of

Chancery of the State of Delaware (or, if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, the federal district court for the District of Delaware).

Delaware Law

As a Delaware corporation, we are subject to Section 203 of the DGCL, which provides that a corporation may not engage in any business combination with an interested stockholder during the three years after the stockholder becomes an interested stockholder unless:

- the corporation's board of directors approved in advance either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- the interested stockholder owned at least 85 percent of the corporation's voting stock at the time the transaction commenced; or
- the business combination is approved by the corporation's board of directors and the affirmative vote of at least two-thirds of the voting stock which is not owned by the interested stockholder.

An interested stockholder is anyone who owns 15% or more of a corporation's voting stock, or who is an affiliate or associate of the corporation and was the owner of 15% or more of the corporation's voting stock at any time within the previous three years; and the affiliates and associates of any those persons. Section 203 of the DGCL makes it more difficult for an interested stockholder to implement various business combinations with our company for a three-year period, although our stockholders may vote to exclude it from the law's restrictions.

PLAN OF DISTRIBUTION

As soon as practicable after _____, 2023, we will distribute the subscription rights, subscription rights certificates and this prospectus to persons who were holders of our common stock and the Participating Warrant at 4:00 p.m., Eastern Time, on _____, 2023, the Record Date for the rights offering. If your common stock is held in the name of a custodian bank, broker, dealer or other nominee, then you should send your subscription documents and subscription payment to that nominee in accordance with such nominee's instructions. If you are the record holder, then you should send your subscription rights certificate and subscription payment to the subscription agent at the address provided below. **Do not send or deliver these materials to the Company.**

By Mail:

Computershare Inc.
150 Royall Street, Suite V
Canton, Massachusetts 02021
Attention: Molekule Rights Offering

By Courier:

Computershare Inc.
150 Royall Street, Suite V
Canton, Massachusetts 02021
Attention: Molekule Rights Offering

If you have any questions, you should contact the information agent, Georgeson, at 1290 Avenue of the Americas, 9th Floor, New York, NY 10104 or at the telephone number 888-607-6511.

Other than as described in this prospectus, we do not know of any existing agreements between any stockholder, broker, dealer, underwriter or agent relating to the sale or distribution of the underlying securities.

LEGAL MATTERS

The validity of the securities offered by this prospectus has been passed upon for us by Freshfields Bruckhaus Deringer US LLP, 601 Lexington Avenue, New York, New York 10022.

EXPERTS

The consolidated financial statements of Molekule Group, Inc. (f/k/a AeroClean Technologies, Inc.) and Subsidiary (the “Company”) as of December 31, 2022 and 2021 and for each of the two years in the period ended December 31, 2022, incorporated in this prospectus by reference to the Annual Report on Form 10-K, as amended, have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to the Company’s ability to continue as a going concern as discussed in Note 1 to the consolidated financial statements) of Citrin Cooperman & Company, LLP, an independent registered public accounting firm, upon the authority of said firm as experts in auditing and accounting.

The financial statements of Molekule, Inc. as of December 31, 2022 and 2021 and for each of the two years in the period ended December 31, 2022, incorporated in this prospectus by reference to exhibit 99.1 of Molekule Group, Inc.’s Current Report on [Form 8-K filed June 9, 2023](#), have been so included in reliance on the report (which contains an explanatory paragraph relating to Molekule, Inc.’s ability to continue as a going concern as described in Note 2 to the financial statements) of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act of 1933 (the “Securities Act”), with respect to the securities being offered by this prospectus. This prospectus does not contain all of the information in the registration statement and its exhibits. For further information with respect to us and the securities offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference. The SEC maintains an internet website that contains reports, proxy statements, and other information about registrants, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

We are subject to the information and periodic reporting requirements of the Exchange Act, and we file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information are available for inspection and copying at the public reference room and website of the SEC referred to above. We maintain a website at <https://www.molekule.com/>. You may access our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not incorporated by reference in, and is not part of, this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus.

We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (Commission File No. 001-41096):

- our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on [March 31, 2023](#), as amended on [April 3, 2023](#);

- our quarterly report on Form 10-Q for the quarter ended March 31, 2023, filed with the SEC on [May 15, 2023](#) and our quarterly report on Form 10-Q for the quarter ended June 30, 2023, filed with the SEC on August 14, 2023;
- our current reports on Form 8-K and all amendments thereto, filed with the SEC on August 14, 2023, [June 22, 2023](#), [June 9, 2023](#), [June 1, 2023](#), [May 9, 2023](#), [February 27, 2023](#), [February 6, 2023](#), [January 12, 2023](#); and
- the description of our common stock contained in our registration statement on [Form 8-A, filed with the SEC on November 19, 2021](#), including all amendments and reports filed for the purpose of updating such description.

In addition, all documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of the offering shall be deemed to be incorporated by reference into this prospectus, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC.

We will provide to each person, including any beneficial owners, to whom a prospectus is delivered, a copy of any or all of the reports or documents that have been incorporated by reference in the prospectus contained in the registration statement but not delivered with the prospectus. We will provide these reports or documents upon written or oral request at no cost to the requester. You should direct any written requests for documents to Attention: Chief Financial Officer, 10455 Riverside Drive, Palm Beach Gardens, FL 33410. You may also telephone us at (833) 652-5326.

You may also access these documents, free of charge, on the SEC's website at www.sec.gov or on our website at <https://investors.molekule.com/financial-information/sec-filings>. Except for the specific incorporated documents listed above, the information contained in, or that can be accessed through, our website is not incorporated by reference into this prospectus or the registration statement of which it forms a part.

In accordance with Rule 412 of the Securities Act, any statement contained in a document incorporated by reference herein shall be deemed modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement.

You should rely only on information contained in, or incorporated by reference into, this prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus or incorporated by reference into this prospectus. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

**Subscription Rights to Purchase up to 10,000 Units
Consisting of up to 10,000 Shares of Convertible Preferred Stock
and Warrants to Purchase up to Shares of Common Stock
at a Subscription Price of \$1,000 per Unit
(and up to shares of Common Stock underlying such Convertible
Preferred Stock and Warrants)**

M O L E K U L E

PROSPECTUS

, 2023

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13.**Other Expenses of Issuance and Distribution.**

The following table sets forth all costs and expenses paid or payable by the registrant in connection with the sale of the securities being registered under this registration statement. All amounts shown are estimates except for the SEC registration fee and the FINRA filing fee.

Expense	Amount
SEC Registration Fee	\$ 2,370
Accounting Fees and Expenses	
Legal Fees and Expenses	
Miscellaneous Fees and expenses	
Total	\$

Item 14.**Indemnification of Directors and Officers.**

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of directors and officers of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director or officer, except where the director or officer breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit, or, with respect to any officer, any action by or in the right of the corporation. Our certificate of incorporation provides that no director or officer of the registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director or officer, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors or officers for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses that the Court of Chancery or such other court shall deem proper.

Our certificate of incorporation and bylaws provide indemnification for our directors and officers to the fullest extent permitted by the General Corporation Law of the State of Delaware. We will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an

“Indemnitee”), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our certificate of incorporation and bylaws provide that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys’ fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

Item 15.

Recent Sales of Unregistered Securities.

On June 26, 2022, we entered into a purchase agreement (“the Purchase Agreement”) with a selling stockholder (the “Selling Stockholder”), pursuant to which we agreed to issue and sell in a private placement (i) an aggregate of 1,500,000 shares of our common stock, par value \$0.01 per share, and (ii) a warrant to purchase up to 1,500,000 shares of our common stock, for an aggregate purchase price of \$15,000,000. The Purchase Agreement contains customary representations, warranties and agreements by us, customary conditions to closing and indemnification obligations of the Selling Stockholder and us. The closing of this private placement occurred on June 29, 2022. The offer and sale of these securities was made pursuant to the exemption from registration provided by Section 4(a)(2) of the Securities Act and/or Regulation D promulgated thereunder.

On May 3, 2023, we entered into a securities purchase agreement (the “SPA”) with the Selling Stockholder, pursuant to which we agreed to issue and sell in a private placement (i) 3,400,000 shares of our common stock, par value \$0.01 per share, (ii) a series A warrant to purchase up to 3,125,000 shares of our common stock, (iii) a series B warrant to purchase up to 6,250,000 shares of our common stock and (iv) a pre-funded warrant to purchase up to 2,850,000 shares of our common stock, for an aggregate purchase price of approximately \$9,971,500. The SPA contains customary representations, warranties and agreements by us, customary conditions to closing and indemnification obligations of the Selling Stockholder and us. The closing of this private placement occurred on May 5, 2023. The offer and sale of these securities was made pursuant to the exemption from registration provided by Section 4(a)(2) of the Securities Act and/or Regulation D promulgated thereunder.

Item 16.

Exhibits and financial statement schedules.

- (a) The exhibits to the registration statement are set forth within the Exhibit Index below.
- (b) No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or notes.

Exhibit Number	Exhibit Description
2.1+	<u>Agreement and Plan of Merger, dated October 3, 2022, by and among AeroClean Technologies, Inc., Air King Merger Sub Inc. and Molekule, Inc. (incorporated by reference to Exhibit 2.1 of the Company's Current Report on Form 8-K (File No. 001-41096) filed with the SEC on October 4, 2022</u>
3.1	<u>mended and Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
3.2**	Form of Certificate of Designations, Preferences and Rights of Convertible Preferred Stock
4.1	<u>Form of Common Stock Certificate (incorporated by reference to Exhibit 4.4 to the Company's Registration Statement on Form S-8 (File No. 333-269209), filed with the SEC on January 13, 2023).</u>
4.2	<u>Form of Share Purchase Option (incorporated by reference to Exhibit 3.2 to the Company's Offering Statement (File No. 024-11650), filed with the SEC on September 21, 2021, as amended).</u>
4.3	<u>Amended and Restated Registration Rights Agreement, dated January 12, 2023 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on January 12, 2023).</u>
4.4	<u>Stockholders Agreement, dated January 12, 2023 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on January 12, 2023).</u>
4.5	<u>Form of Restricted Stock Unit Agreement (Directors) (incorporated by reference to Exhibit 6.10 to the Company's Offering Statement (File No. 024-11650), filed with the SEC on September 21, 2021, as amended).</u>
4.6	<u>Form of Restricted Stock Unit Agreement (incorporated by reference to Exhibit 6.11 to the Company's Offering Statement (File No. 024-11650), filed with the SEC on September 21, 2021, as amended).</u>
4.7	<u>Description of securities registered under Section 12 of the Securities Exchange Act of 1934 (incorporated by reference to Exhibit 4.7 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
4.8**	Form of Common Stock Purchase Warrant to be issued in rights offering
4.9**	Form of Warrant Agency Agreement between Molekule Group, Inc. and Computershare Trust Company, N.A.
4.10**	Form of Subscription Rights Certificate
4.11	<u>Form of 2022 Warrant (Incorporated by reference to exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on June 30, 2022).</u>
4.12	<u>2022 Warrant Amendment (Incorporated by reference to exhibit 4.2 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on May 9, 2023).</u>
4.13	<u>Series A Warrant (Incorporated by reference to exhibit 4.3 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on May 9, 2023).</u>
4.14	<u>Series B Warrant (Incorporated by reference to exhibit 4.4 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on May 9, 2023).</u>
4.15	<u>Pre-Funded Warrant (Incorporated by reference to exhibit 4.5 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on May 9, 2023).</u>
5.1**	Legal opinion of Freshfields Bruckhaus Deringer US LLP.
10.1†	<u>Molekule Group, Inc. 2021 Incentive Award Plan (incorporated by reference to Exhibit 99.1 to the Company's Registration Statement on Form S-8 (File No. 333-261396), filed with the SEC on November 29, 2021).</u>

Exhibit Number	Exhibit Description
10.2†	<u>Molekule Group, Inc. Employee Stock Purchase Plan (incorporated by reference to Exhibit 99.2 to the Company’s Registration Statement on Form S-8 (File No. 333-261396), filed with the SEC on November 29, 2021).</u>
10.3†	<u>Molekule Group, Inc. Non-Employee Directors Stock and Deferred Compensation Plan (incorporated by reference to Exhibit 99.3 to the Company’s Registration Statement on Form S-8 (File No. 333-261396), filed with the SEC on November 29, 2021).</u>
10.4†	<u>Molekule Group, Inc. 2021 Deferred Compensation Plan (incorporated by reference to Exhibit 99.1 to the Company’s Registration Statement on Form S-8 (File No. 333-261395), filed with the SEC on November 29, 2021).</u>
10.5†	<u>Consultant Agreement, dated as of May 1, 2020, between CleanCo Bioscience Group LLC and Jason DiBona (incorporated by reference to Exhibit 6.2 to the Company’s Offering Statement (File No. 024-11650), filed with the SEC on September 21, 2021, as amended).</u>
10.6†	<u>Amended and Restated Employment Agreement by and among Jason DiBona and AeroClean Technologies, Inc., dated October 3, 2022 (incorporated by reference Exhibit 10.5 of the Current Report on Form 8-K filed on October 4, 2022).</u>
10.7†	<u>Confidentiality, Non-Competition, Non-Solicitation and Inventions Assignment Agreement, dated as of November 1, 2020, by and between AeroClean Technologies, LLC and Jason DiBona (incorporated by reference to Exhibit 6.4 to the Company’s Offering Statement (File No. 024-11650), filed with the SEC on September 21, 2021, as amended).</u>
10.8†	<u>Amended and Restated Employment Agreement by and among Ryan Tyler and AeroClean Technologies, Inc., dated October 3, 2022 (incorporated by reference Exhibit 10.6 of the Current Report on Form 8-K filed on October 4, 2022).</u>
10.9†	<u>Confidentiality, Non-Competition, Non-Solicitation and Inventions Assignment Agreement, dated as of November 1, 2020, by and between AeroClean Technologies, LLC and Ryan Tyler (incorporated by reference to Exhibit 6.6 to the Company’s Offering Statement (File No. 024-11650), filed with the SEC on September 21, 2021, as amended).</u>
10.10†	<u>Executive Employment Agreement by and among Ritankar Pal and AeroClean Technologies, Inc., dated October 3, 2022 (incorporated by reference Exhibit 10.8 of the Current Report on Form 8-K filed on October 4, 2022).</u>
10.11†	<u>Confidentiality, Non-Competition, Non-Solicitation and Inventions Assignment Agreement, dated as of October 3, 2022 by and between AeroClean Technologies, LLC and Ritankar Pal (incorporated by reference to Exhibit 10.11 to the Company’s Annual Report on Form 10-K/A (File No. 001-41096), filed with the SEC on April 3, 2023).</u>
10.12^^	<u>License Agreement, dated as of August 11, 2008, between Advanced Technologies & Testing Labs, Inc. and the University of Florida Research Foundation, Inc., as amended (incorporated by reference to Exhibit 10.12 to the Company’s Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.13^^	<u>License Agreement, dated as of July 15, 2015, between Transformair, Inc. and the University of South Florida Research Foundation, Inc., as amended (incorporated by reference to Exhibit 10.13 to the Company’s Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.14^^	<u>Confirmatory Assignment Agreement, dated as of February 20, 2019, between Advanced Technologies & Testing Laboratories, Inc. and Molekule, Inc. (incorporated by reference to Exhibit 10.14 to the Company’s Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.15#	<u>Mezzanine Loan and Security Agreement, dated as of March 22, 2021, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.15 to the Company’s Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>

Exhibit Number	Exhibit Description
10.16#	<u>First Loan Modification Agreement to the Mezzanine Loan and Security Agreement, dated as of May 19, 2022, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.17#	<u>Second Loan Modification Agreement to Mezzanine Loan and Security Agreement, dated as of October 1, 2022, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.18#	<u>Joinder and Sixth Loan Modification Agreement, dated as of January 12, 2023, by and among Silicon Valley Bank, Molekule, Inc. and Molekule Group, Inc. (incorporated by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.19#	<u>Loan and Security Agreement, dated as of June 24, 2016, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.20#	<u>Amended and Restated Loan and Security Agreement, dated as of August 29, 2019, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.20 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.21#	<u>First Loan Modification Agreement to the Loan and Security Agreement, dated as of March 9, 2020, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.22#	<u>Second Loan Modification Agreement to the Loan and Security Agreement, dated as of July 19, 2020, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.23#	<u>Third Loan Modification Agreement to the Loan and Security Agreement, dated as of March 22, 2021, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.24#	<u>Fourth Loan Modification Agreement to the Loan and Security Agreement, dated as of May 19, 2022, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.25#	<u>Fifth Loan Modification Agreement to the Loan and Security Agreement, dated as of October 1, 2022, by and between Silicon Valley Bank and Molekule, Inc. (incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.26#	<u>Joinder and Third Loan Modification Agreement, dated as of January 12, 2023, by and among Silicon Valley Bank, Molekule, Inc. and Molekule Group, Inc. (incorporated by reference to Exhibit 10.26 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.27#	<u>Master Lease Agreement, dated as of June 19, 2020, by and between Trinity Capital Inc and Molekule, Inc. (incorporated by reference to Exhibit 10.27 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>
10.28#	<u>Amendment to the Master Lease Agreement, dated as of August 25, 2021, by and between Trinity Capital Inc and Molekule, Inc. (incorporated by reference to Exhibit 10.28 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).</u>

Exhibit Number	Exhibit Description
10.29#	Second Amendment to the Master Lease Agreement, dated as of June 1, 2022, by and between Trinity Capital Inc and Molekule, Inc. (incorporated by reference to Exhibit 10.29 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).
10.30#	Joinder to Master Lease Agreement, dated as of January 12, 2023, by and among Trinity Capital Inc., Molekule, Inc. (incorporated by reference to Exhibit 10.30 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).
10.31#	Securities Purchase Agreement (Incorporated by reference to exhibit 4.3 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on May 9, 2023).
10.32	Registration Rights Agreement (Incorporated by reference to exhibit 4.3 to the Company's Current Report on Form 8-K (File No. 001-41096), filed with the SEC on May 9, 2023).
21.1	List of Subsidiaries (incorporated by reference to Exhibit 21.1 to the Company's Annual Report on Form 10-K (File No. 001-41096), filed with the SEC on March 31, 2023).
23.1*	Consent of Citrin Cooperman & Company, LLP.
23.2*	Consent of PricewaterhouseCoopers LLP.
23.3**	Consent of Freshfields Bruckhaus Deringer US LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (included on signature page).
99.1**	Form of Instructions as to Use of Subscription Rights Certificate
99.2**	Form of Letter to Stockholders who are Record Holders
99.3**	Form of Broker Letter to Clients who are Beneficial Holders
99.4**	Form of Letter to Brokers, Dealers, Banks and Other Nominees
99.5**	Form of Beneficial Owner Election Form
107*	Filing Fee Table

* Filed herewith

** To be filed by amendment

† Management contract or compensatory plan or arrangement

+ Schedules and exhibits to this exhibit omitted pursuant to Regulation S-K Item 601(b)(2). The registrant agrees to furnish supplementally a copy of any omitted schedule or exhibit to the SEC upon request.

Schedules have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The registrant hereby undertakes to furnish supplemental copies of any of the omitted schedules upon request by the SEC; provided, that the registrant may request confidential treatment pursuant to Rule 24b-2 of the Exchange Act for any schedules so furnished.

^^ Portions of the exhibit (indicated by asterisks) have been omitted in accordance with the rules of the SEC.

Item 17.

Undertakings.

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration

statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement; and

- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, That paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
 - (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
 - (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant’s annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan’s annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
 - (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Palm Beach Gardens, State of Florida, on September 1, 2023.

MOLEKULE GROUP, INC.

/s/ Jason DiBona

Jason DiBona
Chief Executive Officer (Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Jason DiBona and Ryan Tyler, and each or any one of them, as his or her true and lawful attorney-in-fact and agent, each with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, including an additional registration statement pursuant to Rule 462(b) under the Securities Act of 1933, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, 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 below on September 1, 2023.

/s/ Jason DiBona

Jason DiBona

Chief Executive Officer
(Principal Executive Officer)

/s/ Ryan Tyler

Ryan Tyler

Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

/s/ Amin J. Khoury, Ph.D. (Hon)

Amin J. Khoury, Ph.D. (Hon)

Chairman of the Board

/s/ David Helfet, M.D.

David Helfet, M.D.

Director

/s/ Michael Senft

Michael Senft

Director

/s/ Thomas P. McCaffrey

Thomas P. McCaffrey

Director

/s/ Heather Floyd Director
Heather Floyd

/s/ Timothy J. Scannell Director
Timothy J. Scannell

/s/ Stephen M. Ward, Jr. Director
Stephen M. Ward, Jr.

/s/ Brad Feld Director
Brad Feld

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated March 31, 2023, relating to the consolidated financial statements of Molekule Group, Inc. (fka AeroClean Technologies, Inc.) and Subsidiary (the “Company”) as of December 31, 2022 and 2021 and for the years then ended. Our report contains an explanatory paragraph regarding substantial doubt about the Company’s ability to continue as a going concern. We also consent to the use of our name as it appears under the caption “Experts” in this Registration Statement.

/s/ Citrin Cooperman & Company, LLP
New York, New York
September 1, 2023

CONSENT OF INDEPENDENT AUDITORS

We hereby consent to the incorporation by reference in this Registration Statement on Form S-1 of Molekule Group, Inc. of our report dated June 7, 2023, relating to the financial statements of Molekule, Inc., which appears in Molekule Group, Inc.'s Current Report on Form 8-K dated June 9, 2023. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP
San Francisco, California
September 1, 2023

Exhibit 107

Calculation of Filing Fee Table

Form S-1

(Form Type)

Molekule Group, Inc.

(Exact name of Registrant as Specified in its Charter)

Table 1—Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered ⁽¹⁾	Proposed Maximum Offering Price per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Newly Registered Securities							
Equity	Non-transferrable rights to purchase units (“Units”) ⁽²⁾ (3)	—	—	—	—	—	—
Equity	Units consisting of shares of the Registrant’s common stock, \$0.01 par value per share (“Common Stock”) and warrants to purchase shares of Common Stock	457(o) ⁽⁴⁾	—	—	\$ 10,000,000	\$110.20 per \$1,000,000	\$ 1,102
Equity	Common Stock included as part of the Units	—	—	—	—	—	—
Equity	Warrants to purchase Common Stock included as part of the Units ⁽³⁾	—	—	—	—	—	—
Equity	Common Stock issuable upon exercise of the Warrants	457(o) ⁽⁴⁾	—	—	\$ 11,500,000	\$110.20 per \$1,000,000	\$ 1,268
Total Offering Amounts					\$ 21,500,000		\$ 2,370
Total Fee Offsets							—
Net Fee Due							\$ 2,370

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this registration statement also covers such additional shares of the common stock of the registrant, par value \$0.01 per share (the “Common Stock”), as may be issued to prevent dilution from stock splits, stock dividends and similar transactions.
- (2) Non-transferable rights to purchase Units are being issued without consideration on a pro rata basis to holders of the Registrant’s Common Stock and the holder of a pre-funded warrant to purchase common stock issued by the Registrant in May 2023.
- (3) Pursuant to Rule 457(g) under the Securities Act, no separate registration fee is required because these securities are being registered in the same registration statement as the underlying securities of the Registrant.
- (4) Estimated pursuant to Rule 457(o) under the Securities Act solely for the purpose of calculating the registration fee based on an estimate of the proposed maximum aggregate offering price.