MICROFLUIDICS INTERNATIONAL CORP Form S-3/A January 14, 2009 <u>Table of Contents</u>

As filed with the Securities and Exchange Commission on January 13, 2009

Registration Statement No. 333-

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Amendment No. 1

to

FORM S-3

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

11

MICROFLUIDICS INTERNATIONAL CORPORATION

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

04-2793022

(I.R.S. Employer Identification Number)

30 Ossipee Road

Newton, Massachusetts

02464

(617) 969-5452

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

Brian E. LeClair

Microfluidics International Corporation

30 Ossipee Road

Newton, Massachusetts 02464

(617) 969-5452

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

Copies to:

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265 Franklin Street

Boston, MA 02110

(617) 449-6500

Approximate date of commencement of proposed sale to the public	: From time to time	e after the effective	date of this
registration statement.			

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. O

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. X

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

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. O

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. O

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. O

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

Large accelerated filer O

Accelerated filer O

Non-accelerated filer o
(Do not check if a smaller

Smaller reporting company X

reporting company)

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered (1)(2)	Ma Offer	roposed aximum ring Price r Share	M A	roposed Iaximum ggregate ering Price	Re	nount of gistration Fee(3)
Common Stock, par value \$.01 per share, issuable upon conversion of convertible debenture	4,000,000	\$	1.25	\$	5,000,000	\$	196.50
Common Stock, par value \$.01 per share, issuable upon exercise of warrant	4,318,541	\$	2.00	\$	8,637,082	\$	339.44
Common Stock, par value \$.01 per share, issuable upon exercise of warrant	4,159,270	\$	3.00	\$	12,477,810	\$	490.38
TOTAL:	12,477,811		·	\$	26,114,892	\$	1,026.32

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the Securities Act), the shares being registered hereunder include such indeterminate number of additional shares of common stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (2) The number of shares being registered represents our good faith estimate of the maximum number of shares we may issue upon conversion of the convertible debenture and exercise of the common stock purchase warrant. The actual number of shares of common stock received upon conversion of the debenture and exercise of the warrant may vary from this number.
- (3) Previously paid.

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 or until the registration statement shall become effective on such date as the Commission acting pursuant to said Section 8(a), may determine.

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The information contained in this prospectus is not complete and may be changed. The selling stockholder may not sell these securities until the related registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is prohibited.

SUBJECT TO COMPLETION, DATED JANUARY 13, 2009

PRELIMINARY PROSPECTUS

MICROFLUIDICS INTERNATIONAL CORPORATION

12,477,811 Shares

Common Stock

This prospectus relates to the potential resale by the stockholder identified in this prospectus (the Selling Stockholder) of up to 12,477,811 shares of our common stock that the Selling Stockholder has the right to receive upon: (a) the conversion of a \$5,000,000 convertible debenture into up to 4,000,000 shares of our common stock, with a conversion price of \$1.25 per share; and (b) the exercise of a warrant to purchase up to 4,318,541 shares of our common stock at an exercise price of \$2.00 per share and up to 4,159,270 shares of our common stock at an exercise price of \$3.00 per share. The Selling Stockholder acquired the convertible debenture and the warrant from us in a private placement that closed on November 14, 2008 (the Financing), and is more fully described in the section entitled Selling Stockholder beginning on page 11. We are not selling any securities under this prospectus or its supplements and will not receive any of the proceeds from the sale of shares by the Selling Stockholder, but we may receive funds from the exercise of its warrant.

This prospectus may be supplemented from time to time by one or more prospectus supplements.

The Selling Stockholder may sell the shares of common stock described in this prospectus or its supplements in a number of different ways and at varying prices. We provide more information about how the Selling Stockholder may sell its shares of common stock in the section entitled Plan of Distribution on page 12 and in any supplements to this prospectus. We will not be paying any underwriting discounts or commissions in this offering.

Our common stock is listed on the Over-the-Counter Bulletin Board (the OTC Bulletin Board) under the symbol MFLU. On January 9, 2009, the last sale price of the common stock as reported on the OTC Bulletin Board was \$0.55 per share.

8	6 of this prospectus and under simila	w carefully the risks and uncertainties described under the r headings in each prospectus supplement and the other	
9	· ·	nission has approved or disapproved of these securities of	r
determined if this prospectus is truthful or	complete. Any representation to the	contrary is a criminal offense.	

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ABOUT THIS PROSPECTUS

You should rely only on the information contained or incorporated by reference in this prospectus, and on the information contained in any prospectus supplements. We have not, and the Selling Stockholder has not, authorized anyone to provide you with information different from that contained in this prospectus or such supplements. The Selling Stockholder is offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where it is lawful to do so. The information in this prospectus is accurate only as of the date of this prospectus, and the information in any prospectus supplement is accurate only as of the date of such supplement, regardless of the time of delivery of this prospectus or any such supplement or any sale of our common stock.

FORWARD-LOOKING STATEMENTS

This prospectus, any supplements to this prospectus and other documents that are and will be incorporated into this prospectus may contain forward-looking statements. Forward-looking statements include those regarding our goals, beliefs, plans or current expectations and other statements regarding matters that are not historical facts. For example, when we use words such as project, believe, anticipate, plan, exp estimate, intend, should, would, could, or may, or other words that convey uncertainty of future events or outcome, we are making forward-looking statements. Our forward-looking statements are subject to risks and uncertainties. You should note that many important factors, some of which are discussed elsewhere in this prospectus or in the documents we have incorporated by reference, could affect us in the future and could cause our results to differ materially from those expressed in our forward-looking statements. These important factors include the factors we identify in the documents we incorporate by reference in this prospectus. You should read these factors and the other cautionary statements made in this prospectus and in the documents we incorporate by reference as being applicable to all related forward-looking statements wherever they appear in this prospectus and in the documents incorporated by reference. We assume no responsibility to update any forward-looking statements as a result of new information, future events, or otherwise.

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PROSPECTUS SUMMARY

This summary highlights information contained elsewhere or incorporated by reference into this prospectus. Because it is a summary, it does not contain all of the information that you should consider before investing in our common stock. You should read this entire prospectus and any supplements to this prospectus carefully, including the section entitled Risk Factors and the documents that we incorporate by reference into this prospectus or any such supplements, before making an investment decision.

Unless the context requires otherwise, in this prospectus, references to we, us or the Company are to Microfluidics International Corporation.

Company Overview

We have specialized for over 20 years in manufacturing and marketing a broad line of materials processing systems, more specifically known as high shear fluid processing systems, which are systems used in numerous applications in the chemical, pharmaceutical, biotech, food and cosmetics industries.

Our line of high shear fluid processor equipment, marketed under our Microfluidizer® trademark and trade name, process premixed formulations to produce small, uniform structures, usually of the submicron and nanoscale size (commonly defined as particles having dimensions less than 100 nanometers) including nanostructures, microemulsions and nanosuspensions. The equipment produces commercial quantities of such materials important to producers of pharmaceuticals, coatings and other products.

Additionally, our equipment is used for cell disruption to harvest the cultivated contents of bacterial yeast, mammalian and /or plant cells and for liposomal encapsulation of materials for the cosmetics and biotech/biopharma industries.

We continue our efforts to commercialize our proprietary equipment, processes and technology for the continuous production of precipitated submicron or nanoscale particles by interaction of discrete streams of reacting materials (Microfluidics Reaction Technology or MRT). We have undertaken commercialization efforts for our patented Multiple Stream Mixer/Reactor (MMR), which is a high, pressure multiple stream mixer/reactor.

In May 2007, we submitted a paper and presented a poster for a new product at the Nano Science and Technology Institute (NSTI) Nanotech 2007 Meeting. The presentation introduced a variant of our Microfluidics Reaction Technology, the Co-Reactor process and technology (Co-Reactor). The Co-Reactor utilizes our Microfluidizer processor equipped with a co-axial feed to, among other processes; advance the manufacturing nanosuspensions from the bottom up by chemical reactions or physical processes such as crystallization. It has been demonstrated for a variety of drugs using solvent and anti-solvent crystallization. We anticipate commercialization and introduction of Co-Reactor technology and equipment in 2009.

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The technology embodied within our Microfluidizer high shear fluid processor is used for formulation of products that are normally very difficult to mix and stabilize. Microfluidizer processors through process intensification allow manufacturers in the chemical, pharmaceutical, cosmetic, and food processing industries to produce higher quality products with better characteristics on a more consistent basis than with other blending, mixing or homogenizing techniques.

Further, we guarantee scale up of formulations and results on our processor equipment from flow rates as low as 100 to 200 milliliters per minute on our laboratory and bench top models to more than 15 gallons per minute on our production models.

Additionally, the equipment is used for cell disruption to harvest the cultivated contents of bacterial, yeast, mammalian and/or plant cells and for liposomal encapsulation of materials for the cosmetics and biotech/biopharma industries.

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Our management believes that future commercialization and growth of nanotechnology may be, in large part, enabled by the manufacturing capability of our processing equipment and our Microfluidics Reaction Technology.

We were incorporated in Delaware in 1983. The Company, formerly named Biotechnology Development Corporation, changed its name effective June 8, 1993 to Microfluidics International Corporation, and again changed its name effective July 12, 1999 to MFIC Corporation. On June 18, 2008, we changed the Company s name back to Microfluidics International Corporation. Our principal executive offices are located at 30 Ossipee Road, in Newton, Massachusetts 02464 and our telephone number is (617) 969-5452.

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SUMMARY OF THE OFFERING

On November 14, 2008, we sold a convertible debenture (the Debenture) and a warrant (the Warrant) to Global Strategic Partners, LLC, a Delaware limited liability company (GSP or the Selling Stockholder) pursuant to a Debenture and Warrant Purchase Agreement (the Agreement).

The Debenture

At the election of GSP, the Debenture, which has a principal face value of \$5,000,000, is convertible into four million (4,000,000) shares of the Company's common stock. The Debenture may be converted in whole or part on any of the maturity date, the date that any interest payment is due, or the date on which a change of control occurs into a number of shares of our common stock equal to the quotient of (i) the outstanding principal amount of the Debenture, divided by (ii) \$1.25. The total market value of the shares of common stock underlying the Debenture was \$1,400,000 as of November 14, 2008, the date the Debenture was issued to GSP. This value was calculated based on the \$0.35 per share closing price of the common stock on November 14, 2008, as reported by the OTC Bulletin Board.

The Company received one hundred percent (100%) of the proceeds from the sale of the Debenture, and no portion of those proceeds has been paid or is payable to GSP or any of its affiliates. Other than the repayment of principal or interest earned on the Debenture, no payment has been made or is required to be made to GSP, its affiliates, or any person with whom GSP has a contractual relationship regarding the sale of the Debenture, including any finder or placement agent. The Company fully intends to make all payments due under the Debenture, and management fully believes that the Company will have the financial ability to do so. We have made inquiry of GSP and have been informed that GSP does not have a short position in the our common stock.

The Warrant

The Warrant may be exercised in whole or part until the earlier to occur of: (i) the seventh anniversary of the date of the Agreement, (ii) the third anniversary of the date of the Agreement in the event that we have retired the Debenture on or before the third anniversary or (iii) such time as GSP has acquired fifty percent (50%) of the total number of shares of our common stock then outstanding on a fully diluted basis. The Warrant is exercisable in two (2) tranches. The first tranche is exercisable in whole or in part at \$2.00 per share. The aggregate number of shares of our common stock that may be purchased in tranche one is forty percent (40%) of our common stock then outstanding on a fully diluted basis, minus that number of shares of our common stock that were issuable upon exercise of the conversion of the Debenture. The Warrant s second tranche is exercisable in whole or in part at \$3.00 per share. The aggregate number of shares of our common stock that may be purchased in tranche two is equal to fifty percent (50%) of our common stock then outstanding on a fully diluted basis, minus the sum of that number of shares of our common stock that were issuable upon exercise of the conversion of the Debenture and in tranche one. Tranche two may only be exercised after the full number of shares exercisable pursuant to tranche one have been purchased. The Selling Stockholder has the right to exercise the Warrant, in whole or in part, by tendering shares of our common stock to us in payment of the exercise price, in which event we would receive shares of our common stock instead of cash upon the Selling Stockholder s exercise of the Warrant in that fashion.

The conversion and exercise prices of each of the Debenture and the Warrant were substantially in excess of the market price of the Company s common stock as of the date of the transaction. As a result, there was no possible profit to GSP associated with the purchase of either the

Debenture or the Warrant at the time of the transaction.

To facilitate the resale of the common stock underlying each of the Debenture and the Warrant, we are registering the following shares for resale by GSP:

- 4,000,000 shares issuable upon conversion of the principal amount of the Debenture; and
- 8,477,811 shares issuable upon exercise of the Warrant.

The number of shares to be registered in connection with the conversion of the Debenture was calculated by dividing the outstanding principal amount of the Debenture (\$5.0 million) by the \$1.25 conversion price set forth in the Debenture. To determine the aggregate number of shares to be registered in connection with the exercise of the Warrant, we first calculated the total number of shares of the Company s common stock outstanding on a fully diluted basis. This number was calculated based on the following figures: (i) 10,345,532 shares of common stock were outstanding as of November 18, 2008 (as set forth in the Company s Quarterly Report on Form 10-Q for the quarter ended September 30, 2008, as amended, the most recent filing with the Commission) (hereinafter, the Total Outstanding Shares or TOS); (ii) no shares of common stock were issued by the Company after November 18, 2008; (iii) the only other securities convertible into, or exercisable for the purchase of, common stock of the Company outstanding as of November 18, 2008 were options to purchase 1,305,840 shares of common stock, and no additional options to purchase common stock were issued after that date (although subsequent to that date 30,000 options were issued by the Company as of January 2, 2009) (hereinafter, the Total Convertible Securities or TCS); (iv) 826,439 shares of common stock have been reserved for issuance under the Company s 2006 Stock Plan (which number has now been reduced to 786,439 due to the issuance of the 30,000 options described above) (hereinafter, the Total Shares Reserved for Future Option Grants or TSRFOG; (v) the exercise in full of the Debenture for 4,000,000 shares (the Debenture Shares or DS); and (vi) the exercise in full of the Warrant. To the extent that we issue additional securities beyond the numbers contemplated above (for example, an acquisition for stock), the number of shares issuable upon exercise of the Warrant will increase on a share-for-share basis and we will be required to register those additional shares with the Securities and Exchange Commission at that time.

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued to satisfy an exercise of the first tranche of the Warrant was calculated by solving for X where X = .4*(TOS + TCS + TSRFOG + X), and then subtracting the 4,000,000 Debenture Shares. The total number of shares of common stock that would need to be issued to satisfy an exercise of the second tranche of the Warrant was calculated by solving for Y where Y = TOS + TCS + TSRFOG, and then subtracting both the 4,000,000 Debenture Shares and the shares acquired upon exercise of the first tranche of the Warrant (*i.e.*, X).

We will not receive any of the proceeds from the Selling Stockholder s sale of our common stock. The Selling Stockholder will pay the cost of any brokerage commissions and discounts, and all expenses incurred by it in connection with the sale of those securities. See Plan of Distribution.

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RISK FACTORS

You should carefully consider the risks and uncertainties described below and the other information in this filing before deciding to purchase our common stock. If any of these risks or uncertainties occurs, our business, financial condition or operating results could be materially harmed. In that case the trading price of our common stock could decline and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we may face. We believe that this filing contains forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are subject to regulatory risks and clinical uncertainties. Such statements are based on management s current expectations and are subject to facts that could cause results to differ materially from the forward-looking statements. For further information you are encouraged to review our filings with the Securities and Exchange Commission, including our Annual Report on Form 10-K for the year ended December 31, 2007 and our Quarterly Reports on Form 10-Q for the periods ended March 31, 2008, June 30, 2008 and September 30, 2008. We assume no continuing obligation to update the information contained in this filing.

We have experienced operating losses from continuing operations in two of our last five fiscal years, including the fiscal year ended December 31, 2007, and we may not be able to achieve consistent profitability in the future.

For two of the past five fiscal years, as well as the nine months ended September 30, 2008, we have experienced losses from continuing operations. During the nine months ended September 30, 2008 and the fiscal year ended December 31, 2007, we had a net loss of \$2,300,000 and \$1,507,000 respectively, and it is anticipated that we will have a net loss in the current fiscal year.

Our financial condition will be jeopardized if revenues do not increase as anticipated.

Management has committed to investing in the growth of our business, particularly with regard to making investments in sales and marketing. Those investments are likely to draw down our cash in advance of us receiving the additional revenues anticipated from such investments. As a result, our cash position could be reduced and we could confront liquidity problems if revenues do not increase as anticipated or revenues are delayed beyond expectations, and we continue to experience net losses from operations as described above.

A default under the Financing could result in substantial losses to our stockholders.

The outstanding amount of our Financing would become immediately due and payable upon the occurrence of an Event of Default under the Financing documents. See our Current Report on Form 8-K filed with the Securities and Exchange Commission on November 20, 2008 for a full discussion of the events that constitute an Event of Default. Although most of the Events of Default are standard provisions relating to timely payments, accuracy of representations, solvency, and the absence of a change of control, an Event of Default will also occur if our stockholders fail to approve an increase in our authorized shares to a number sufficient to allow the Warrant to be exercised in full, which event is entirely beyond the control of management. If any Event of Default occurs, there can be no assurance that we would be able to repay the Financing. Failure to repay the Financing could force us to reorganize our debts, possibly in bankruptcy, in which event our common stock could become worthless.

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued taleatisfy a

We face intense competition in many of our markets.

Our Microfluidizer product line of high-shear fluid processors has direct competition in its major markets, including its most important markets in the pharmaceutical, biotechnology and coatings/chemical industries. The severity of the competition that we confront requires that we continuously invest in research and development in order to keep our product line competitive. Despite such expenditures, however, there can be no assurance that we will be able to meet the enhancement challenges posed by our competitors, or that we will be able to create or exploit the kinds of innovations, such as our Microfluidics Reaction Technology, needed to drive future sales.

In addition, we face, and will continue to face, intense competition from other companies who manufacture and sell fluid processing systems used in particle size reduction, mixing, milling, dispersing, homogenizing, cell disruption and liposomal encapsulation applications. We expect competition to intensify in the fluid processing systems field as technical advances are made and become more widely known, and such increased competition may have a material adverse effect upon our business.

Our future success will depend in large part on our ability to maintain a technologically superior product line. Rapid technological development by us or others may result in our products or technologies becoming obsolete before we recover the expenses we incur in connection with their development. Products offered by us could be

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made obsolete by les	s expensive or more e	effective technologies	s. There can be no	assurance that we	will be able to make	the enhancements to our
technology necessary	to compete successf	ully with newly emer	rging technologies	S.		

We may experience uncertain economic trends that adversely impact our business.

We may experience in the future reduced demand for our products as a result of the uncertainty in the general economic environment in which our customers and we operate. We cannot project the extent of the impact of the economic environment specific to our industry. If economic conditions worsen or if an economic slowdown occurs, we may experience a material adverse effect on our business, operating results and financial condition.

We rely on suppliers, vendors and subcontractors.

We do not manufacture most of the components contained in our Microfluidizer materials processor equipment, but rather subcontract the manufacture of most components. Based on quality, price, and performance, we have selected certain suppliers, vendors, and subcontractors that provide parts, subassemblies, machining and finishing of components that are assembled by our production staff. It is possible that, as a result of the current economic slowdown or other reasons, one or more of our suppliers, vendors or subcontractors could go out of business or otherwise be unable to supply our needs. Although we have identified alternate sources for parts, components, machining and finishing integral to the manufacture of our products, there can be no assurance that a transition to an alternative source would not entail quality assurance or quality control difficulties, on-time delivery problems, or other transition problems, any or all of which could have an impact on our production of equipment and could have a material adverse effect on our business, financial condition, or results of operations.

Many of our current and potential customers are from the pharmaceutical and biotechnology industries and are subject to risks faced by those industries.

We derive a substantial portion of our revenues from pharmaceutical and biotechnology companies. We expect that pharmaceutical and biotechnology companies will continue to be one of our major sources of revenues for the foreseeable future. As a result, we are subject to risks and uncertainties that affect the pharmaceutical and biotechnology industries, such as pricing pressures as third-party payers continue challenging the pricing of medical products and services, government regulation, ongoing consolidation and uncertainty of technological change, and to reductions and delays in research and development expenditures by companies in these industries.

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In particular, the biotechnology industry is dependent on raising capital to fund operations. If biotechnology companies are unable to obtain the financing necessary to purchase our products, our business and results of operations could be materially adversely affected. As it relates to both the biotechnology and pharmaceutical industries, many companies have significant patents that have expired or are about to expire, which could result in reduced revenues for those companies. If pharmaceutical companies suffer reduced revenues as a result of these patent expirations, they may be unable to purchase our products, and our business and results of operations could be materially adversely affected.

In addition, we are dependent, both directly and indirectly, upon general health care spending patterns, particularly in the research and development budgets of the pharmaceutical and biotechnology industries, as well as upon the financial condition and purchasing patterns of various governments and government agencies. Many of our customers, including universities, government research laboratories, private foundations and other institutions, obtain funding for the purchase of products from grants by governments or government agencies. There exists the risk of potential decrease in the level of governmental spending allocated to scientific and medical research, which could substantially reduce or even eliminate these grants. If government funding necessary to purchase our products were to decrease, our business and results of operations could be materially adversely affected.

Lastly, because our Financing was provided by an affiliate of a pharmaceutical company that competes with other pharmaceutical companies, it is possible that the other companies might decide against doing business with us in the future for competitive reasons. If a significant number of pharmaceutical companies were to reduce their purchases of our products for this or any other reason, our business and results of operations could be materially adversely affected.

We have only one manufacturing facility.

We have a single manufacturing facility located in Newton, Massachusetts. Our success depends on the efficient and uninterrupted operation of that facility. Whether as a result of a fire, natural disaster, or other cause, any disruption to our manufacturing operations would significantly impair our ability to operate our business on a day-to-day basis. Although we maintain business interruption insurance, our business would be injured by any extended interruption of the operations of our manufacturing facility. Further, although we carry property and business interruption insurance, our coverage may not be adequate to compensate us for all losses that may occur. This insurance may not continue to be available to us. Finally, if we seek to replicate our manufacturing operations at another location, we will face a number of technical as well as financial challenges, which we may not be able to address successfully.

We rely on our trade secrets to protect our technology.

Our Microfluidizer processor equipment method patent expired on March 13, 2007 and our device patent expired on August 6, 2002. In addition, we have neither sought patent protection for our Microfluidizer processor or our interaction chamber nor trademark protection of our Microfluidizer trade name in any country other than the United States. As such, our proprietary rights are not subject to the protection of patent or trademark laws of foreign countries where our equipment is sold. Although we have made many alterations, improvements and advances to our equipment over the years and continues to make such advancements with such modification and innovations having been and being treated by us as trade secrets, the lack of our patent protections will expose us to potential competition that would likely have a material adverse effect on us.

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of the total num

To protect our proprietary rights, we rely on a combination of trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. In the event of a breach of these protections, there can be no assurance that these measures will prove to have been adequate to protect our interests, or that we will have sufficient resources to prosecute or prevail in an action against a third party.

We may be subjected to increased government regulation which could affect our ability to sell our products outside of the United States.

Although United States governmental restrictions on technology transfer, import, export and customs regulations and other present local, state or federal regulation, have not had a significant effect on us historically, any future legislation or administrative action restricting our ability to sell our products to certain countries outside the United States could significantly affect our ability to make certain foreign sales. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. In particular, the USA Patriot Act and other governmental regulations may impose export restrictions on sale of equipment or transfer of technology to certain countries or groups. There can be no assurance that sale of our

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equipment will not be impacted by any such legislation or designation. Depending upon which countries and sales may be designated for trade restriction such action could have a material adverse effect on our business, financial condition, or results of operations. Also, certain agreements that may be entered into by us involving exclusive license rights may also be subject to national or supranational antitrust regulatory control, the effect of which cannot be predicted.

We rely on our top management and technical personnel.

Our continued operation, innovation and growth are to some significant degree reliant on the continued services of our executive officers and leading technical personnel. There can be no assurance that we will be able to retain such management and technical personnel if employment is offered by other companies better able to pay higher compensation, provide more and better benefits, or willing to offer longer term job security by entering into employment contracts with our employees. Further, there can be no assurance that key executive officers and leading technical personnel will not leave our employment or either die or become disabled to an extent that they cannot render their services to us. Though we believe that we can identify and recruit replacement key management and technical personnel, there can be no assurance as to such availability, the length of time required to obtain such replacement management and technical personnel, the salary level that may have to be paid to obtain their respective services, or the impact on operations that may be experienced through the interim absence of such key management and technical personnel. The loss of our top management or leading technical personnel could, therefore, have a material adverse effect on our business, financial condition, or results of operations.

Our stock is listed on the OTC Bulletin Board and our stockholders may have limited liquidity.

Our common stock is quoted on the OTC Bulletin Board, which provides significantly less liquidity than a securities exchange (such as the American or New York Stock Exchanges or The Nasdaq Stock Market). In general, over the past two years, fewer than 20,000 shares of our common stock have traded on a daily basis.

Our quarterly revenues and stock performance are variable.

The timing of orders and subsequent shipment will significantly affect quarterly revenues and resulting net income results for particular quarters which may cause increased volatility in both our revenues and stock price.

We allow our customers to lease some of our products and those leases may not turn into sales.

We sometimes lease our products to our customers prior to or instead of selling a product to a customer. Our products are expensive, and customers frequently want to test out a product s capabilities prior to purchase. We have had reasonable success in converting leases into subsequent sales of the same or a newer product; however, there is no guarantee that we will continue to be able to convert any of our leases into sales.

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued to b

We may be subject to product liability claims from our customers or by persons harmed by our customers products.

We maintain what we deem to be reasonable levels of product liability coverage through insurance policies with a reasonably small deductible. Nonetheless, inasmuch as we sell our equipment to a number of customers who make pharmaceutical preparations and consumer cosmetics, there can be no assurance that if a consumer of end products is injured or dies from such product that a suit by an injured party (or a class of similar situated plaintiffs) will not include us as well as the maker of the drug or cosmetic. Although we may have no control over the manufacture of end-products made on our equipment, we may not be able to bar a plaintiff s claims against all parties whose products and equipment were involved in the manufacturing process under a variety of legal theories of liability. We may be required to present a vigorous and costly defense if we cannot be dismissed from such an action. The cost of such legal defense may significantly impact our cash flow.

Our international business operations expose us to a variety of risks.

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For the three months ended September 30, 2008 and 2007, shipments outside of North America accounted for approximately 43.9% and 44.1%, respectively, of our net revenues in those periods.

We attempt to reduce some of our risk related to sales and shipments outside of the United States by requiring that our contracts generally be paid in United States Dollars. Nevertheless, a downturn in the economies of Japan, Korea or Europe might reduce investment in new technology or products while a weakening of foreign currency against the United States Dollar would make our products more expensive, each of which could have a substantial impact on our operating results.

In addition, a significant portion of our total net revenue is subject to the risks associated with shipping to foreign markets in general, including unexpected changes in legal and regulatory requirements; changes in tariffs; political and economic instability; risk of terrorism; difficulties in managing distributors and representatives; difficulties in protecting our intellectual property overseas; and natural disasters, any of which could have a negative impact on our operating results.

We may experience difficulties in the future in complying with Sarbanes-Oxley Section 404 (Section 404); and continued implementation and maintenance of internal controls necessary for continued compliance with Section 404 may result in our incurring of additional costs.

We are required to evaluate our internal controls under Section 404 of the Sarbanes-Oxley Act of 2002. We were also required to furnish a report by our management on our internal controls over financial reporting beginning with our annual report on Form 10-K for the fiscal year ended December 31, 2007. Such report contains, among other matters, an assessment of the effectiveness of our internal control over financial reporting as of the end of our fiscal year, including a statement as to whether or not our internal control over financial reporting is effective. While we have completed our self-assessment as to the effectiveness of internal control over financial reporting for the year ended December 31, 2007, which did not identify material weaknesses in our internal control systems, there can be no assurance that future material weaknesses in our internal control systems will not be identified as a result of changing financial or operating conditions. In addition, although we are currently not required to subject our internal controls to audit by our independent registered public accounting firm until at least our fiscal year ending December 31, 2009, there can be no assurance that an audit of our internal controls will not result in the identification of a material weakness. If we fail to maintain proper and effective internal controls in future periods, it could adversely affect our operating results, financial condition and our ability to run our business effectively and could cause investors to lose confidence in our financial reporting. In the event that it is determined that our internal control over financial reporting is not effective, as defined under Section 404, investor confidence in us may be adversely affected and could cause a decline in the market price of our stock.

Future changes in financial accounting standards may adversely affect our reported results of operations.

A change in accounting standards can have a significant effect on our reported financial results. New accounting pronouncements and varying interpretations of accounting pronouncements have occurred and may occur in the future. These new accounting pronouncements may adversely affect our reported financial results.

If our accounting estimates are not correct, our financial results could be adversely affected.

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued t85 satisfy a

Management judgment and estimates are necessarily required in the application of our Critical Accounting Policies. We discuss these estimates in the subsection entitled Critical Accounting Policies included in the Management s Discussion and Analysis of Financial Condition and Results of Operations section of our Annual and Quarterly Reports with the Securities and Exchange Commission. If our estimates are incorrect, our future financial operating results and financial condition could be adversely affected.

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USE OF PROCEEDS

We will not receive any of the proceeds from the sale of our common stock by the Selling Stockholder. However, we may receive proceeds upon exercise of the Warrant issued to the Selling Stockholder. We intend to use any proceeds from the exercises of the Warrant for working capital and general corporate purposes.

SELLING STOCKHOLDER

The shares of common stock being offered by the Selling Stockholder are issuable upon conversion of the Debenture and upon exercise of the Warrant. For additional information regarding the Debenture and Warrant, see Summary of the Offering. We are registering the shares of common stock in order to permit the Selling Stockholder to offer the shares for resale from time to time. Except as otherwise noted and except for the Financing and the ownership of the Debenture and the Warrant, the Selling Stockholder has not had any material relationship with us within the past three years.

The table below contains information regarding the beneficial ownership of our common stock by the Selling Stockholder. The second column lists the number of shares of common stock beneficially owned by the Selling Stockholder, based on its ownership of the Debenture and the Warrant, as of January 13, 2009, assuming conversion of the entire principal amount of the Debenture and exercise of the Warrant in full, without regard to any limitations on conversions or exercise. The third column lists the shares of common stock being offered by this prospectus by the Selling Stockholder. For purposes of the table below, beneficial ownership is determined in accordance with Rule 13d-3 under the Securities Exchange Act of 1934, as amended, pursuant to which a selling stockholder is deemed to have beneficial ownership of any shares of common stock that such stockholder has the right to acquire within 60 days of January 13, 2009.

There were no securities transactions between the Company and the Selling Stockholder or any of its affiliates prior to the issuance and sale of the Debenture and the Warrant on November 14, 2008. None of the Company s securities have been registered for resale by the Selling Stockholder or any of its affiliates on any prior registration statements.

In accordance with the terms of a Registration Rights Agreement, dated as of November 14, 2008, with the Selling Stockholder, this prospectus generally covers the resale of 4,000,000 shares of common stock issued or to be issued upon conversion of the Debenture and 8,477,811 shares of common stock issued or to be issued upon exercise of the Warrant. All of the shares being registered under this prospectus are being registered for resale by the Selling Stockholder. The fourth column assumes the sale of all of the shares offered by the Selling Stockholder pursuant to this prospectus. The Selling Stockholder may sell all, some or none of the shares in this offering. See Plan of Distribution.

Number of Shares Owned and Ownership Percentage **Maximum Number of Shares** Name of Selling Security Prior to Offering (2) to be Sold Pursuant to this **Number of Shares Owned After Offering** Holder Number Percent **Prospectus** Global Strategic Partners, LLC (1) 12,477,811 50% 12,477,811 0

(1) Global Strategic Partners, LLC is a wholly owned subsidiary of Abraxis BiosScience, LLC, a Delaware limited liability company.
(2) Percentages reflect an aggregate of 24,955,622 shares of our common stock outstanding on a fully-diluted basis immediately prior to the offering. Of such
outstanding shares, 9,863,873 shares are beneficially owned by persons not affiliated with the Company or the Selling Stockholder.
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PLAN OF DISTRIBUTION

The Selling Stockholder and any of its pledgees, assignees, and successors-in-interest may, from time to time, sell any or all of the shares of our common stock that they own on any stock exchange, market or trading facility on which shares of our common stock are traded or in private transactions. These sales may be at fixed or negotiated prices. The Selling Stockholder may use any one or more of the following methods when selling shares:

- transactions on the Over-the-Counter Bulletin Board (or on such other market on which the shares may be trading);
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the Selling Stockholder to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any of these methods of sale; or
- any other method permitted pursuant to applicable law.

The Selling Stockholder may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholder may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholder (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with NASD Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with NASD IM-2440.

The Selling Stockholder and any broker-dealers or agents that are involved in selling the shares may be deemed to be underwriters within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. The Selling Stockholder has informed us that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the common stock.

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued t89 satisfy a

We are required to pay certain fees and expenses incurred by us incident to the registration of the shares. We have agreed to indemnify the Selling Stockholder against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

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Because the Selling Stockholder may be deemed to be an underwriter within the meaning of the Securities Act, it will be subject to the prospectus delivery requirements of the Securities Act including Rule 172 thereunder. In addition, as described above, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than under this prospectus. There is no underwriter or coordinating broker acting in connection with the proposed sale of the resale shares by the Selling Stockholder.

We have agreed to keep this prospectus effective until the earlier of (i) the date on which the shares may be resold by the Selling Stockholder without registration and without regard to any volume limitations by reason of Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the shares have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale shares will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Securities Exchange Act of 1934, as amended (the Exchange Act), any person engaged in the distribution of the resale shares may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholder will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of shares of the common stock by the Selling Stockholder or any other person. We will make copies of this prospectus available to the Selling Stockholder and have informed it of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by McCarter & English, LLP.

EXPERTS

The consolidated financial statements of Microfluidics International Corporation appearing in our Annual Report on Form 10-K for the years ended December 31, 2007 and December 31, 2006, have been audited by UHY LLP, an independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference information from some of our other SEC filings. This means that we can disclose information to you by referring you to those other filings, and the information incorporated by reference is considered to be part of this prospectus. In addition, some information that we file with the SEC after the date of this prospectus will automatically update, and in some cases supersede, the

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of common stock that would need to be issued to take the total number of shares of the total num

information contained or otherwise incorporated by reference in this prospectus. The following documents, which we filed with the SEC, are incorporated by reference in this registration statement:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2007, filed with the SEC on March 21, 2008;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2008, filed with the SEC on May 13, 2008;

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- Our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2008, filed with the SEC on August 12, 2008;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2008, filed with the SEC on November 18, 2008, as amended on November 20, 2008;
- Our Current Report on Form 8-K filed with the SEC on March 18, 2008;
- Our Current Report on Form 8-K filed with the SEC on March 26, 2008;
- Our Current Report on Form 8-K filed with the SEC on April 11, 2008;
- Our Current Report on Form 8-K filed with the SEC on June 10, 2008;
- Our Current Report on Form 8-K filed with the SEC on July 7, 2008;
- Our Current Report on Form 8-K filed with the SEC on October 24, 2008;
- Our Current Report on Form 8-K filed with the SEC on November 20, 2008;
- The description of our common stock contained in our registration statement on Form 8-A (File No. 0-11625) filed with the SEC under Section 12 of the Securities Exchange Act of 1934, including any amendment or report filed for the purpose of updating such description.

Current Reports on Form 8-K containing only Regulation FD or Regulation G disclosure furnished under Items 2.02 and 7.01 of Form 8-K are not incorporated herein by reference.

All documents and reports filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than Current Reports on Form 8-K containing only Regulation FD or Regulation G disclosure furnished under Items 2.02 and 7.01 of Form 8-K, unless otherwise indicated therein) after the date of this prospectus and prior to the termination of the offering made hereby shall be deemed to be incorporated by reference into this prospectus and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus 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 or in any prospectus supplement modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide, without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request of such person, a copy of any or all of the documents incorporated herein by reference other than exhibits, unless such exhibits are specifically incorporated by reference into such documents or this document. Requests for such documents should be addressed in writing or by telephone to:

Microfluidics International Corporation

30 Ossipee Road, Newton, Massachusetts 02464

Attention: Brian E. LeClair

(617) 969-5452

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This prospectus is part of a registration statement on Form S-3 that we filed with the SEC under the Securities Act. This prospectus does not contain all of the information contained in the registration statement. For further information about us and our securities, you should read the prospectus and the exhibits filed with the registration statement, as well as all prospectus supplements.

You should rely only on the information contained in this prospectus, any prospectus supplement or any document incorporated by reference in this prospectus. We have not authorized anyone else to provide you with information that is different. This prospectus and any prospectus supplement may be used only where it is legal to sell these securities. The information in this prospectus or any prospectus supplement is current only as of the date on the front of these documents.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy these reports, proxy statements and other information filed by us at the SEC s public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference room. Our SEC filings are also available at the SEC s website at http://www.sec.gov. Our internet address is www.mficcorp.com. Information contained on our website is not incorporated by reference into this prospectus and, therefore, is not part of this prospectus or any accompanying prospectus supplement.

INDEMNIFICATION

Pursuant to the provisions of Section 145 of the General Corporation Law of the State of Delaware, the Company has the power to indemnify certain persons, including any of its officers and directors, under stated circumstances and subject to certain limitations, for liabilities incurred as the result of serving in any such capacity, so long as such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company, and with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

Our Amended and Restated By-Laws (the By-Laws) contain provisions to the general effect that each director and officer shall be indemnified by the Company against liabilities and expenses in connection with any threatened, pending or completed legal proceeding to which he may be made a party or with which he may become involved by reason of having been an officer or director of the Company. Indemnification is available (except by court order) only if it is determined to be proper by a majority of disinterested directors constituting a quorum, by the stockholders, or by independent legal counsel in a written opinion. In order to be entitled to indemnification, the indemnified person must have acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company, and with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. In the case of an action by or in the right of the Company, indemnification is precluded if such person has been adjudged to be liable to the Company, unless and to the extent that the Court of Chancery of the State of Delaware or the court in which the action was brought shall determine that indemnification is proper. The By-Laws provide that if Section 145 of the General Corporation Law of the State of Delaware is amended, then the By-Laws shall be amended automatically to permit indemnification of officers and directors to the fullest extent permitted by the General Corporation Law of the State of Delaware.

The By-Laws provide that the Company may obtain insurance indemnifying each officer and director of the Company against any liability which may be asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the Company would otherwise have the power to indemnify such officer or director pursuant to its By-Laws. The Company maintains an errors and omissions liability policy for the benefit of its officers and directors, which may cover certain liabilities of such individuals to the Company and its stockholders.

Section 102(b)(7) of the General Corporation Law of the State of Delaware provides that a certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director of a corporation to

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such corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, provided that such provisions may not eliminate or limit the liability of a director (i) for any breach of the director s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 (relating to liability for unauthorized acquisitions or redemptions of, or dividends on, capital stock) of the General Corporation Law of the State of Delaware or (iv) for any transaction from which the director derived an improper personal benefit. Our restated certificate of incorporation, as amended, contains such a provision.

The above discussion of the Company s restated certificate of incorporation, as amended, errors and omissions liability policy and By-Laws and of Sections 102(b)(7) and 145 of the General Corporation Law of the State of Delaware is not intended to be exhaustive and is qualified in its entirety by reference to such restated certificate of incorporation, as amended, insurance policy, By-Laws and statutes.

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION OF SECURITIES ACT LIABILITIES

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers or persons controlling the Registrant pursuant to the above, 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.

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth the expenses we expect to incur and pay in connection with the issuance and distribution of the securities being registered (all amounts shown are estimates except for the registration fee):

Registration Fee - Securities and Exchange Commission	\$ 1.026.32
Accounting Fees and Expenses	\$ 2,000.00
Legal Fees and Expenses	\$ 48,000.00
TOTAL	\$ 51,026.32

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Pursuant to the provisions of Section 145 of the General Corporation Law of the State of Delaware, the Company has the power to indemnify certain persons, including any of its officers and directors, under stated circumstances and subject to certain limitations, for liabilities incurred as the result of serving in any such capacity, so long as such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company, and with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

The Amended and Restated By-Laws of the Company (the By-Laws) contain provisions to the general effect that each director and officer shall be indemnified by the Company against liabilities and expenses in connection with any threatened, pending or completed legal proceeding to which he may be made a party or with which he may become involved by reason of having been an officer or director of the Company. Indemnification is available (except by court order) only if it is determined to be proper by a majority of disinterested directors constituting a quorum, by the stockholders, or by independent legal counsel in a written opinion. In order to be entitled to indemnification, the indemnified person must have acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company, and with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. In the case of an action by or in the right of the Company, indemnification is precluded if such person has been adjudged to be liable to the Company, unless and to the extent that the Court of Chancery of the State of Delaware or the court in which the action was brought shall determine that indemnification is proper. The By-Laws provide that if Section 145 of the General Corporation Law of the State of Delaware is amended, then the By-Laws shall be amended automatically to permit indemnification of officers and directors to the fullest extent permitted by the General Corporation Law of the State of Delaware.

The By-Laws provide that the Company may obtain insurance indemnifying each officer and director of the Company against any liability which may be asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the Company would otherwise have the power to indemnify such officer or director pursuant to its By-Laws. The Company maintains an errors and omissions

Utilizing the foregoing figures, the total number of shares of common stock that would need to be issued to be

liability policy for the benefit of its officers and directors, which may cover certain liabilities of such individuals to the Company and its stockholders.

Section 102(b)(7) of the General Corporation Law of the State of Delaware provides that a certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director of a corporation to such corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, provided that such provisions may not eliminate or limit the liability of a director (i) for any breach of the director s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 (relating to liability for unauthorized acquisitions or redemptions of, or dividends on, capital stock) of the General Corporation Law of the State of Delaware or (iv) for any transaction from which the director derived an improper personal benefit. The Company s restated certificate of incorporation, as amended, contains such a provision.

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The above discussion of the Company s restated certificate of incorporation, as amended, errors and omissions liability policy and By-Laws and of Sections 102(b)(7) and 145 of the General Corporation Law of the State of Delaware is not intended to be exhaustive and is qualified in its entirety by reference to such restated certificate of incorporation, as amended, insurance policy, By-Laws and statutes.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers or persons controlling the Registrant pursuant to the above, 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.

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ITEM 16. EXHIBITS.

Exhibit No.	Description
4.1	Certificate of Incorporation for the Company, as amended (filed as Exhibit 2A to Registration Statement No. 0-11625 on Form 8-A and as Exhibit 3.1(a) to the Company s Report on Form 10-Q for the quarterly period ended September 30, 1999 and incorporated herein by reference).
4.2	Amended and Restated By-Laws for the Company (filed as Exhibit 3.3(b) to the Company s Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
5.1	Opinion of McCarter & English, LLP as to the legality of shares being registered (Filed herewith).
10.1	Debenture and Warrant Purchase Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 (Filed herewith).
10.2	Amendment No. 1 to Debenture and Warrant Purchase Agreement and Amendment No. 1 to Convertible Debenture, between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 17, 2008 (Filed herewith).
10.3	Registration Rights Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 and amended on December 3, 2008 (Filed herewith).
10.4	Security Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 (Filed herewith).
10.5	Convertible Debenture issued by Microfluidics International Corporation to Global Strategic Partners, LLC, dated as of November 14, 2008, as amended (Filed herewith).
10.6	Common Stock Purchase Warrant issued by Microfluidics International Corporation to Global Strategic Partners, LLC, dated as of November 14, 2008 (Filed herewith).
23.1	Consent of McCarter & English, LLP (included in Exhibit 5.1 filed herewith).
23.2	Consent of UHY LLP (Filed herewith).
24.1	Power of Attorney (included on the signature page to the Registration Statement on Form S-3 filed on December 11, 2008 and incorporated herein by reference).

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ITEM 17. UNDERTAKINGS
The undersigned registrant hereby undertakes:
(a) (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 a 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;
<i>Provided, however</i> , that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the registration statement and 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.

(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) That for the purpose of determining liability under the Securities Act to any purchaser, if the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying of 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 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.

(d) The undersigned registrant hereby undertakes to deliver or cause to be delivered with the prospectus, to each person to whom the prospectus is sent or given, the latest annual report to security holders that is incorporated by reference in the prospectus and furnished pursuant to and meeting the requirements of Rule 14a-3 or Rule 14c-3 under the Securities Exchange Act of 1934; and, where interim financial information required to be presented by Article 3 of Regulation S-X are not set forth in the prospectus, to deliver, or cause to be delivered to each person to

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whom the prospectus is sent or given, the latest quarterly report that is specifically incorporated by reference in the prospectus to provide such interim financial information.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Newton, Commonwealth of Massachusetts on January 13, 2009.

MICROFLUIDICS INTERNATIONAL CORPORATION

By: /s/MICHAEL C. FERRARA

Michael C. Ferrara

President and Chief Executive Officer

(principal executive officer)

By: /s/ BRIAN E. LECLAIR

Brian E. LeClair

Executive Vice-President and Chief Financial

Officer

(principal financial and accounting officer)

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Name and Signature	Title(s)	Date
/s/ MICHAEL C. FERRARA Michael C. Ferrara	President, Chief Executive Officer and Director (principal executive officer)	January 13, 2009
/s/ BRIAN E. LECLAIR Brain E. LeClair	Executive Vice-President and Chief Financial Officer (principal financial and accounting officer)	January 13, 2009
* James N. Little	Director	January 13, 2009
* Leo Pierre Roy	Director	January 13, 2009



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* Director January 13, 2009

George Uveges

* Director January 13, 2009

Eric G. Walters

*/s/ BRIAN E. LECLAIR Brian E. LeClair Attorney in Fact

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EXHIBIT INDEX

Exhibit No.	Description
4.1	Certificate of Incorporation for the Company, as amended (filed as Exhibit 2A to Registration Statement No. 0-11625 on Form 8-A and as Exhibit 3.1(a) to the Company s Report on Form 10-Q for the quarterly period ended September 30, 1999 and incorporated herein by reference).
4.2	Amended and Restated By-Laws for the Company (filed as Exhibit 3.3(b) to the Company s Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
5.1	Opinion of McCarter & English, LLP as to the legality of shares being registered (Filed herewith).
10.1	Debenture and Warrant Purchase Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 (Filed herewith).
10.2	Amendment No. 1 to Debenture and Warrant Purchase Agreement and Amendment No. 1 to Convertible Debenture, between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 17, 2008 (Filed herewith).
10.3	Registration Rights Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 and amended on December 3, 2008 (Filed herewith).
10.4	Security Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 (Filed herewith).
10.5	Convertible Debenture issued by Microfluidics International Corporation to Global Strategic Partners, LLC, dated as of November 14, 2008, as amended (Filed herewith).
10.6	Common Stock Purchase Warrant issued by Microfluidics International Corporation to Global Strategic Partners, LLC, dated as of November 14, 2008 (Filed herewith).
23.1	Consent of McCarter & English, LLP (included in Exhibit 5.1 filed herewith).
23.2	Consent of UHY LLP (Filed herewith).
24.1	Power of Attorney (included on the signature page to the Registration Statement on Form S-3 filed on December 11, 2008 and incorporated herein by reference).