
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

AMENDMENT NO. 1
TO
FORM S-3
REGISTRATION STATEMENT
Under
The Securities Act of 1933

CRYOLIFE, INC.

(Exact name of Registrant as specified in its charter)

Florida
(State or other jurisdiction of
incorporation or organization)

59-2417093
(I.R.S. Employer
Identification Number)

1655 Roberts Boulevard, NW
Kennesaw, Georgia 30144
(770) 419-3355
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

J. Patrick Mackin,
Chairman, President and
Chief Executive Officer
CryoLife, Inc.
1655 Roberts Boulevard, NW
Kennesaw, Georgia 30144
(770) 419-3355
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Jean F. Holloway, Esq.,
General Counsel
CryoLife, Inc.
1655 Roberts Boulevard, NW
Kennesaw, Georgia 30144
(770) 419-3355

Copies to:
Paul R. Tobias
Wilson Sonsini Goodrich & Rosati
Professional Corporation
900 S. Capital of Texas Highway
Las Cimas IV, Fifth Floor
Austin, Texas 78746-5546
(512) 338-5400

Robert C. Brighton, Jr.
Shutts & Bowen LLP
200 East Broward Boulevard
Suite 2100
Fort Lauderdale, Florida 33301
(954) 524-5505

Approximate date of commencement of proposed sale to the public: From time to time 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.

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.

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.

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 statement for the same offering.

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.

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.

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 the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share (2)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common Stock	3,703,699	\$11.14	\$41,259,206.86	\$4,154.81(3)

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the shares of common stock registered hereunder include such indeterminate number of 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) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) under the Securities Act, based upon the average of the high and low sales prices of the registrant's common stock on March 7, 2016, as reported on the New York Stock Exchange.
- (3) The filing fee was previously paid when this Registration Statement on Form S-3 of CryoLife, Inc. was initially filed with the Securities and Exchange Commission on March 9, 2016.

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 Commission acting pursuant to said Section 8(a) may determine.

Explanatory Note

We are filing this Amendment No. 1 (this "Amendment No. 1") to our Registration Statement on Form S-3 previously filed with the Securities and Exchange Commission on March 9, 2016 (the "Original Filing") to correct certain matters on the facing page of the Original Filing. Except for such changes to the facing page, this Amendment No. 1 does not amend or otherwise update any other information in the Original Filing.

ITEM 16. EXHIBITS.

The following exhibits are included herein or incorporated herein by reference:

Exhibit Number	Description	Incorporated by reference herein		
		Form	Date	Exhibit Number
2.1*	Agreement and Plan of Merger, dated May 14, 2012, by and among CryoLife, Inc., CL Crown, Inc., Hemosphere, Inc. and a Stockholder Representative.	10-Q	7/31/12	2.1
2.2*	Agreement and Plan of Merger, dated as of December 22, 2015, by and among CryoLife, Inc., On-X Life Technologies Holdings, Inc., Cast Acquisition Corporation, Fortis Advisors LLC and each of the security holders who becomes a party thereto. Certain schedules and exhibits referenced in the Agreement and Plan of Merger have been omitted in accordance with Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule or exhibit will be furnished supplementally to the Securities and Exchange Commission upon request.	8-K	1/25/16	2.1
4.1*	Form of Certificate for Common Stock of CryoLife, Inc.	10-K	2/19/98	4.2
4.2*	Registration Rights Agreement, dated as of January 20, 2016, by and between CryoLife, Inc. and the investors parties thereto.	8-K	1/25/16	4.1
4.3*	Form of Indenture for Senior Debt Securities	S-3	8/5/15	4.7
4.4*	Form of Subordinated Indenture for Subordinated Debt Securities	S-3	8/5/15	4.9
5.1**	Opinion of Shutts and Bowen LLP			
23.1**	Consent of Shutts and Bowen LLP (included in Exhibit 5.1 to this Registration Statement)			
23.2**	Consent of Ernst & Young LLP			
23.3**	Consent of KPMG LLP			
23.4**	Consent of Padgett Stratemann & Co., LLP			
24.1**	Power of Attorney			

* Incorporated by reference herein

** Previously filed on March 9, 2016

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 Kennesaw, State of Georgia, on March 23, 2016.

CryoLife, Inc.

By: /s/ D. Ashley Lee
Executive Vice President, Chief Operating
Officer, Chief Financial Officer and Treasurer

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement on Form S-3 has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ J. Patrick Mackin</u> J. Patrick Mackin	Chairman of the Board, Chief Executive Officer, President and Director (Principal Executive Officer)	March 23, 2016
<u>/s/ D. Ashley Lee</u> D. Ashley Lee	Executive Vice President, Chief Operating Officer, Chief Financial Officer and Treasurer (Principal Financial Officer)	March 23, 2016
<u>/s/ Amy D. Horton</u> Amy D. Horton	Vice President, Chief Accounting Officer (Principal Accounting Officer)	March 23, 2016
<u>*</u> Thomas F. Ackerman	Director	March 23, 2016
<u>*</u> James S. Benson	Director	March 23, 2016
<u>*</u> Daniel J. Bevevino	Director	March 23, 2016
<u>*</u> Ronald C. Elkins, M.D.	Director	March 23, 2016
<u>*</u> Ronald D. McCall	Director	March 23, 2016
<u>*</u> Harvey Morgan	Director	March 23, 2016
<u>*</u> Jon W. Salveson	Director	March 23, 2016

*By: /s/ D. Ashley Lee
D. Ashley Lee
Attorney-in-fact

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