

INTERNATIONAL ISOTOPES INC  
Form 424B3  
September 14, 2011

**Filed Pursuant to Rule 424(b)(3)**

**Registration No. 333-171140**

**Prospectus Supplement No. 2 to Prospectus dated July 20, 2011, as previously supplemented by  
Prospectus Supplement No. 1 dated August 10, 2011.**

**59,687,333 Shares**

**Common Stock, par value \$0.01**

This Prospectus Supplement No.2 supplements the prospectus of International Isotopes Inc. (the Company ) dated July 20, 2011 and Prospectus Supplement No. 1 dated August 10, 2011 (the Prospectus ), relating to the offer and sale of up to 29,075,000 shares of our outstanding common stock and 30,612,333 shares of our common stock issuable upon the exercise of warrants previously issued to certain shareholders named in the Prospectus pursuant to a private placement completed on October 29, 2010. This Prospectus Supplement No. 2 should be read in conjunction with the Prospectus and is qualified by reference to the Prospectus, except to the extent that the information in this Prospectus Supplement No. 2 supersedes the information contained in the Prospectus, and may not be delivered or utilized without the Prospectus.

This Prospectus Supplement No. 2 includes the attached report, as set forth below, as filed by the Company with the Securities and Exchange Commission.

The Company s Current Report on Form 8-K, filed with the Securities and Exchange Commission on September 14, 2011.

Our common stock is quoted on the OTC Bulletin Board® under the ticker symbol INIS.OB. On September 9, 2011, the last sale price of the common stock, as reported on the OTC Bulletin Board®, was \$0.15 per share.

**Investing in our securities involves risk. You should carefully review the risks and uncertainties described under the heading Risk Factors beginning on page 1 of the Prospectus and in the documents which are incorporated by reference therein.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The date of this Prospectus Supplement No. 2 is September 14, 2011.

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(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
  
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
  
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
  
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

**Item 3.03**

**Material Modifications to Rights of Security Holders.**

The disclosure in Item 8.01 below is incorporated into this Item 3.03 by reference.

**Item 8.01**

**Other Events.**

In an effort to raise capital to support its ongoing depleted uranium de-conversion and fluoride extraction process project, on September 8, 2011, the board of directors of International Isotopes Inc. (the Company ), authorized an offer to its current warrant holders to encourage them to exercise outstanding warrants. The offer permits holders of the Company's outstanding warrants to purchase the Company's common stock, par value \$0.01 per share at a discounted warrant exercise price of \$0.10 per share in cash until 5:00 p.m. EDT on September 30, 2011. The Company discounted the exercise price of its (i) Class F warrants, which were issued on November 7, 2008, from \$0.30 to \$0.10, (ii) Class G warrants, which were issued on September 18, 2009 from \$0.36 to \$0.10, (iii) Class H warrants, which were issued on August 24, 2011, from \$0.22 to \$0.10, (iv) Class I warrants, which were issued on October 29, 2010, from \$0.40 to \$0.10 and (v) its Class J Warrants, which were issued on March 25, 2011, from \$0.43 to \$0.10. If the warrants are not exercised by 5:00 p.m. EDT on September 30, 2011 they will revert to their original terms.

In addition, on September 8, 2011, in order to give certain warrant holders sufficient time to exercise their warrants in accordance with the offer described above, the board of directors of the Company authorized the extension of the expiration date of its (i) Class G warrants from September 18, 2011 to September 30, 2011 and (ii) Class J warrants from September 25, 2011 to September 30, 2011.

Except as set forth above, the terms and conditions of the warrants remain unchanged. For additional information on each class of the Company's warrants, including forms of each such warrant, please see: (i) with respect to the Class F warrants, the Company's current report Form 8-K filed on November 12, 2008 and Exhibit 99.1 thereto, (ii) and with respect to the Class G warrants, the Company's current report Form 8-K filed on September 18, 2009 and Exhibit 4.7 thereto, (iii) with respect to the Class H warrants, the Company's current report Form 8-K filed on February 25, 2010 and Exhibit 4.2 thereto, (iv) with respect to the Class I warrants, the Company's current report Form 8-K filed on November 1, 2010 and Exhibit 4.1 thereto and (v) with respect to the Class J warrants, the Company's annual report Form 10-K filed on March 31, 2011 and Exhibit 4.7 thereto.



**SIGNATURES**

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

**International Isotopes Inc.**

Date: September 14, 2011

By:

/s/ Steve T. Laflin  
Steve T. Laflin

President and Chief Executive Officer