

<b>NRC FORM 7</b> (8-2011) 10 CFR 110		<b>U.S. NUCLEAR REGULATORY COMMISSION</b> <b>APPROVED BY OMB: NO. 3150-0027</b> <b>EXPIRES: 08/31/2012</b> <small>Estimated burden per response to comply with this mandatory collection request: 2.4 hours. This submittal is reviewed to ensure that the applicable statutory, regulatory, and policy considerations are satisfied. Send comments regarding burden estimate to the Information Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0027), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.</small>	
<b>APPLICATION FOR NRC EXPORT OR IMPORT LICENSE, AMENDMENT, RENEWAL, OR CONSENT REQUEST(S)</b> <i>(See Instructions on Pages 4 and 5)</i>			
<b>PART A. FOR NRC USE ONLY</b>		<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC	
<b>LICENSE NUMBER</b> XMAT410/03		<b>DOCKET NUMBER</b> 11005754	
		<b>DATE RECEIVED</b> JAN 31 2017 SF	
		<b>ADAMS ACCESSION NUMBER</b>	
<b>PART B. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, RENEWALS, OR CONSENT REQUESTS</b> <i>(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)</i>			
<b>1. NAME AND ADDRESS OF APPLICANT/LICENSEE</b> Sigma-Aldrich Co. LLC 3050 Spruce Street St. Louis, MO 63103		<b>1a. NAME OF APPLICANT'S CONTACT</b> Jared Fenton <b>1c. PHONE NUMBER</b> (314) 286-8326 <b>1e. E-MAIL ADDRESS</b> jared.fenton@sial.com	
		<b>1b. APPLICANT'S REFERENCE NUMBER</b>  <b>1d. FAX NUMBER</b> (314) 286-8005	
<b>2. TYPE OF ACTION REQUESTED (Check One)</b> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> EXPORT (Parts B, C, E)         </div> <div> <input type="checkbox"/> IMPORT (Parts B, D, E)         </div> <div> <input checked="" type="checkbox"/> AMENDMENT/RENEWAL          Current License Number:          XMAT410/02         </div> <div> <input type="checkbox"/> CONSENT REQUEST (Parts B, C)          Current License Number:         </div> </div>			
<b>3. CONTRACT NUMBER(S)</b>		<b>4. FIRST SHIPMENT DATE</b>	
		<b>5. LAST SHIPMENT DATE</b>	
		<b>6. PROPOSED EXPIRATION DATE</b> 12/31/2021	
<b>PART C. TO BE COMPLETED FOR EXPORT LICENSES, AMENDMENTS, RENEWALS OR CONSENTS</b> <i>(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)</i>			
<b>7. NAME(S) / ADDRESS(ES) OF SUPPLIERS AND/OR OTHER PARTIES TO THE EXPORT</b> Aldrich Chemical Co. LLC 6000 North Teutonia Avenue Milwaukee, WI 53209 (Continues on Page 3)		<b>8. NAME(S) / ADDRESS(ES) OF INTERMEDIATE FOREIGN CONSIGNEE(S)</b> N/A	
		<b>9. NAME(S) / ADDRESS(ES) OF ULTIMATE FOREIGN CONSIGNEE(S)</b> Sigma-Aldrich Japan KK 2-2-24 Higashi- Shinagawa Shinagawa-KU Tokyo, 1400002 Japan (Continues on Page 3)	
<b>7a. FUNCTION(S) PERFORMED/SERVICE(S) PROVIDED</b> See Page 3		<b>8a. INTERMEDIATE USE(S)</b> N/A	
		<b>9a. ULTIMATE END USE(S)</b> See Page 3	
<b>10. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES, EQUIPMENT, OR COMPONENTS; FOR NUCLEAR EQUIPMENT INCLUDE TOTAL DOLLAR VALUE OF EQUIPMENT FOR EXPORT</b> Deuterium in the form of: 1. Deuterated compounds 2. Deuterium oxide 3. Deuterium gas		<b>10a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq)</b> An additional 5,000 kg for a cumulative total of 10,000 kg	
		<b>10b. MAX ENRICHMENT OR WGT %</b> N/A	
		<b>10c. MAX ISOTOPE WGT (KG)</b> N/A	
<b>11. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME)</b> Deuterium is of Canadian origin			

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U.S. NUCLEAR REGULATORY COMMISSION

# **APPLICATION FOR NRC EXPORT OR IMPORT LICENSE, AMENDMENT, RENEWAL, OR CONSENT REQUEST(S) (Continued)**

LICENSE NUMBER <b>XMAT410/03</b>	DOCKET NUMBER <b>11005754</b>	ADAMS ACCESSION NUMBER	<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC
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## **PART D. TO BE COMPLETED FOR IMPORT LICENSES, AMENDMENTS, OR RENEWALS** (If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

12. NAME(S) / ADDRESS(ES) OF FOREIGN SUPPLIERS AND/OR OTHER PARTIES TO IMPORT N/A	13. NAME(S) / ADDRESS(ES) OF INTERMEDIATE CONSIGNEE(S) N/A	14. NAME(S) / ADDRESS(ES) OF ULTIMATE U. S. CONSIGNEE(S) N/A
12a. NRC EXPORT LICENSE NUMBER(S) (if applicable) N/A	13a. LICENSE NUMBER(S) / EXPIRATION DATE(S) N/A	14a. LICENSE NUMBER(S) / EXPIRATION DATE(S) N/A
	13b. INTERMEDIATE USE(S) N/A	14b. ULTIMATE END USE(S) N/A
15. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES N/A	15a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq) N/A	15b. MAX ENRICHMENT OR WGT % N/A
		15c. MAX ISOTOPE WGT (KG) N/A

16. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME)

## **PART E. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, RENEWALS OR CONSENT REQUEST(S)**

17. ADDITIONAL INFORMATION PROVIDED ON PAGES 3, 4, AND/OR ON SEPARATE SHEETS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	17a. COPIES OF RECIPIENTS' AUTHORIZATIONS PROVIDED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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**18. CERTIFICATION:** I, the applicant's authorized official, hereby certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, and that all information provided is correct to the best of my knowledge.

18a. PRINT NAME AND TITLE OF AUTHORIZED OFFICIAL Jared Fenton Head of Trade Compliance, USA	18b. SIGNATURE -- AUTHORIZED OFFICIAL 	18c. DATE 1/18/17
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JAN 31 2017 *Rec'd SF*



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U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR NRC EXPORT OR IMPORT  
LICENSE, AMENDMENT, RENEWAL OR CONSENT REQUEST(S) (Continued)

LICENSE NUMBER <b>XMAT 410/03</b>	DOCKET NUMBER <b>11005754</b>	ADAMS ACCESSION NUMBER	<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC
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ADDITIONAL INFORMATION (Reference applicable block numbers from page 1 and/or page 2 for each entry)

## Block 7. Other U.S. Party(ies) to Export

Aldrich Chemical Co. LLC  
3858 Benner Road  
Miamisburg, OH 45342

Aldrich Chemical Co. LLC  
6950 Ambassador Drive  
Allentown, PA 18106

## Block 7a. Functions Performed

Sigma-Aldrich will sell the various deuterium compounds to the ultimate consignee listed in Part C, Box 9 for further distribution into the Japanese medical, pharmaceutical, chemical, and industrial markets.

## Block 9a. Ultimate end use

Sigma-Aldrich products are for research purposes only. This type of scientific research may include identification of chemicals in reaction pathways, metabolic studies, or environmental analysis. Most products are sold in prepackaged units and delivered directly to the end-user/research facility. No material is to be used in any activity related to isotope separation, heavy water production, or in the fabrication of nuclear fuel.

JAN 31 2017 Rec'd  
SF

January 23, 2017

Deputy Director  
Office of International Programs  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Deputy Director,

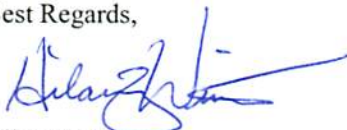
License XMAT410/02 will be expiring this year. As outlined in the application, Sigma-Aldrich would like to extend the license by four additional years, as well as extend the exported volume by another 5,000 kg for a cumulative total of 10,000 kg.

I have been in contact with Stanley Freeman, NRC Licensing Assistant, and he informed me that this request would be classified as "generic" review which carries a fee of \$4,800.

Please find enclosed the application, check, and the email with Mr. Freeman.

Please let me know if you have any questions.

Best Regards,



Hilary Wirth  
Export Trade Compliance Specialist  
Sigma-Aldrich Co.  
545 S. Ewing Ave.  
St. Louis, MO 63103  
(314) 286-7605  
Hilary.Wirth@sial.com

Enclosures