				×		Page 1 of	3
NRC FORM 7 (6-2006) 10 CFR 110 APPLICATION FOR NRC E) LICENSE, AMENDMENT, (See Instructions on Page	OR RENEWA	ORT	APPROVED BY OME Estimated burden per resp submittal is reviewed to er are satisfied. Send com Services Branch (T-5 F52 or by internet e-mail to in Regulatory Afairs, NEOB DC 20503. If a means use OMB control number, the respond to, the information	ponse to comply wi nsure that the appli- ments regarding b (), U.S. Nuclear Re focollects@nrc.gov I-10202, (3150-002 ed to impose an infi e NRC may not co	th this mandatory of cable statutory, regu urden estimate to gutatory Commission, and to the Desk (7), Office of Managormation collection	ulatory, and policy of the Records and on, Washington, DC Officer, Office of Inf ement and Budget, does not display a	4 hours. This considerations FOIA/Privacy 20555-0001 formation and Washington currently valid
PARTA. FOR NRC USE ONLY		OR [NON-PUBLIC	DATE RECEI		6-06	
XMAT0401-02	DOCKET NUMBER	15 <i>2</i> ,	66	ADAMS ACC	ESSION NUMBI	BR	
PART B. TO BE COMF (If more space is needed to complete	PLETED FOR <u>A</u> te any of the items, t	LL LICE	NSES, AMENDA 3-4 first, and then at	MENTS, OF tach additiona	RENEWA	LS cessary.)	
1. NAME AND ADDRESS OF APPLICANT/LICENSEE	1a. NAM		CANT'S CONTACT	1b. APF	LICAN'TS REF	ERENCE NUME	BER
Sigma-Aldrich Corp. and subsidiaries	Jam	nes A San	ders	Ap	pl. Dto	. 10-10	FOE
6000 N. Teutonia Avenue Milwaukee, WI 53209		NE NUMBER					
Attn: James A Sanders	`	4) 438-385		(4	14) 438-423	5	
		iders@sia					
2. TYPE OF NRC LICENSE REQUESTED (Chec	k One)			· · ·			
EXPORT IMPORT (Parts B, C, E) (Parts B, D, E		MBINED EX ts B, C, D,	XPORT/IMPORT E)	Existin	IDMENT/REN Ing License Nur XMAT0401		
3. CONTRACT NUMBER(S) 4. FIRST SHIP 01/02/20			ST SHIPMENT DATE 1/02/2008		6. PROPOSED 02/28/200	EXPIRATION D	ATE
PART C. TO BE COMPLETED FOR I (If more space is needed to complet							WALS
7. NAME(S) / ADDRESS(ES) OF SUPPLIERS AND/OR OTHER PARTIES TO THE EXPORT	8. NAME(S) / ADDRE FOREIGN CONSIG		INTERMEDIATE		ADDRESS(ES)		
				2-2-24Hi	ors: Idrich Japan igashi-Shina wa-Ku 1400	gawa	
				Sigma-A 368 Oon Chiba-Ko Ichikawa	en 272		RECEIVE
				Also, ref	er to page 3	16	VI
78. LIST FUNCTIONS PERFORMED/SERVICE PROVIDED	8a. INTERMEDIATE USE	E(S)		9a. ULTIMATE E		Befer to a	7
		400 1111				. Refer to pa	<u> </u>
10. DESCRIPTION OF RADIOACTIVE MATERIALS, SEA NUCLEAR FACILITIES, EQUIPMENT, OR COMPON		ELEM	TOTAL VOLUME / IENT WGT (KG), OR L ACTIVITY (TBq)	10b. MAX ENF OR WGT		0c. MAX ISOTŌ VØST (KG)	
Deuterium gas Deuterium oxide Deuterium compounds		2500			k	.	
11. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PI	ERCENTAGE OF MAX		AL VOLUME)	l	ł_		
Deuterium oxide is sourced from Canada			.,				
NRC FORM 7 (6-2006)			<u> </u>	·····	PRIM	ITED ON RECYCL	

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NRC FORM 7 (6-2008)			U.S. NUCLEAR REG	SULATORY COMMISSIO
10 CFR 110	PPLICATION F	OR NRC EXPORT/I	MPORT	
LICENS	SE, AMENDME	NT, OR RENEWAL	(Continued)	
BCENSE NUMBER, DOCKET	NUMBER	ADAMS ACCESSION NUMBER		R
PART D. TO BE COMPLETED FO (If more space is needed to con	DR IMPORT ONLY	r, OR COMBINED LICE, use Pages 3-4 first, and then	NSES, AMENDMENT attach additional sheets, il	S, OR RENEWALS
12. NAME(S) / ADDRESS(ES) OF FOREIGN SUPPLIERS AND/OR OTHER PARTIES TO IMPORT	13. NAME(S) / ADD	13. NAME(S) / ADDRESS(ES) OF INTERMEDIATE CONSIGNEE(S)		ES) OF ULTIMATE
120. NRC EXPORT LICENSE NUMBER(S)	139, LICENSF NUM	BER(S) / EXPIRATION DATE(S)	148. LICENSE NUMBER(S)	
(if applicable)			148. LICENSE NUMBER(S)	
		EUSE(S)	145. INTERMEDIATE USE(s 6 Minor VED OI
15. DESCRIPTION OF RADIOACTIVE MATERIALS, NUCLEAR FACILITIES	SEALED SOURCES.	158 MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TEG)	1Sb. MAX ENRICHMENT OR WGT %	15c. MAXAEDTOPE
6. FOREIGN OBLIGATIONS (BY COUNTRY AND B	Y PERCENTAGE OF MA	(MUM TOTAL VOLUME)		
PART E. TO BE CON		L LICENSES, AMENDA		
7. ADDITIONAL INFORMATION		178. COPIES OF RECIP AUTHORIZATIONS	PIENTS'	YES NO
	regulations, and the	ereby certify that this applic at all information provided is	cation is prepared in con s correct to the best of n	formity with Title10, by knowledge.
a. PRINT NAME AND TITLE OF AUTHORIZED OFF James A. Sanders Supervisor-Technical Compliance Environmental, Safety, Health, and Re	ICIAL	180. SIGNATURE - AUTHOPIZE		18c. DATE 10/16/2000

NRC FORM 7 (6-2006) 10 CFR 110			i.	J.S. NUCLEAR RE	GULATORY C	:ON
		ION FOR NRC I	EXPORT/IMPC	PT		
	LICENSE, AME					
	DOCKETNUMBER	ADAMS ACCES	SION NUMBER			
XMATOHOF	02 110052	66			IR [NO)N-
ADDITIONAL INFORMATIO	N (Reference applicable bloc	k numbers from page 1 a	and/or page 2 for each	entry)	<u></u>	
NRC Form 7. Part C. 9	 Name(s)/Addresses of U 	Itimate Foreign Consig	gnee(s)			
Taiyo Nippon Sanso Co Toyo Bldg, 1-3-26 Koya	orporation					
Shinagawa-ku, Tokyo, 1	1428558					
Japan						
Note: All consignees list monitored.	ted in Part C.9 have wareh	ouses in which the pro	oducts are stored.	ine facilities are s	secured and	
NRC Form 7. Part C. 9	a. Ultimate end use(s)					
into the Japanese medi materials in relatively sr	sell the various deuterium o ical, pharmaceutical, chemi mall quantities (i.e., less tha pathways, metabolic studi	cal and industrial mari in 1 Kg) for scientific r	kets. Their custome esearch. This type	ers in Japan typic	ally use thes	е
labeling of compounds f	e sold in prepackaged units for distribution throughout J , or in the fabrication of nuc	lapan. No material wil				
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6000 N. Teutonia Ave. Milwaukee, WI 53209 USA Tel: (800) 558-9160 * (414) 438-3580 Fax: (800) 962-9591 * (414) 438-4979

Margaret Doane Deputy Director, Office of International Programs U.S. Nuclear Regulatory Commission One White Flint North 11555 Rockville Pike Rockville, MD, 20852-2738

XMAT0401/02 11005266

October 9, 2006

Regarding License XMAT0401

Dear Ms. Doane,

We are sending this packet to amend our existing license to distribute deuterium oxide and deuterium compounds to Japan, under license number XMAT0401. At this point we have shipped ~ 2270 kg of the 2500 kg authorized under the existing license. The existing license expires 12/31/2006.

We would like to make the following changes to the license:

- Extend the expiration date to 02/28/2008. (Given our distribution pattern under the current license, we expect we will have used up the remaining amount covered by the existing license by that time)
- 2) Change the contact person from L. R. Clarke to James A Sanders
- 3) Make the first shipment date under the new license: 01/02/2007
- 4) Make the last shipment date under the amended license: 01/02/2008
- 5) Change the address of licensee from:

Sigma-Aldrich Corp. and subsidiaries 3050 Spruce Street St. Louis, MO 63103

St. Louis, MO 63103 Change the address to: Sigma-Aldrich Corp and subsidiaries 6000 North Teutonia Avenue Milwaukee, WI 53209 (Please Note: This change is the same corporation but a different site, in line with the new contact person.) 6) Change one of the "ultimate consignee(s)" from: Nippon Sanso Corporation 4-320-1 Tsukagoshi

Saiwai-Ku Kawasaki 210-8509 Japan

Accelerating Customers' success through Leadership in Life Science, High Technology and Service



6000 N. Teutonia Ave. Milwaukee, WI 53209 USA Tel: (800) 558-9160 * (414) 438-3580 Fax: (800) 962-9591 * (414) 438-4979

XMAT 0401/02 11005266

Change the consignee to: Taiyo Nippon Sanso Corporation Toyo Bldg, 1-3-26 Koyama Shinagawa-Ku Tokyo, 1428558 Japan

(Please Note: This is, in reality, the same corporation as before, but they have modified their name slightly and have moved their headquarters operations.)

Since it is our understanding that these changes constitute only minor changes to the license, we are including a payment of 300.00 300.00

If there is any other information or certifications needed, please call me.

Sincerely. anos

James A. Sanders Supervisor, Technical Compliance Sigma-Aldrich, Milwaukee (414) 438-3850 extension 5307 isanders@sial.com

Attachments:

- 1) Copy of existing license with modifications noted
- 2) Application for NRC Export/Import License, Amendment or Renewal
- 3) Check for license amendment fee

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NRC FORM 250			NRC LICENSE NO.
(6-94) THIS I ICENSE EV	PIRES_December 31, 2006		XMAT0401/02 110052
	_		XMAT0401
1	Inited States of America		Amendment No. 01- 02_ Page 1 of 3
	Nuclear Regulatory Commission		
Reorganization Act of Commission issued pu	ic Energy Act of 1954, as amended, and the Energy 1974 and the regulations of the Nuclear Regulatory insuant thereto, and in reliance on statements and fore made by the licensee, a license is hereby issued	to the licensee au or utilization faci- herein.	thorizing the export of the materials and/or product lities listed below, subject to the terms and conditi
	LICENSEE	ULTI	MATE CONSIGNEE IN FOREIGN COUNTRY
Sigma-Aldric 3050 Spruce St . Lou is, MO	h Corp. and subsidiaries Street & COO N. Tentoma Ave 63103 Milwaukee, Wil 53209	See Page	2 for list of Ultimate Forelgn Consignee
Attn: L. R. Cl	arke James A. Sanders	(For distrib chemical a use).	oution into the medical, pharmaceutical, and industrial markets for non-nuclear er
INTERMEDIATE CON	SIGNEE IN FOREIGN COUNTRY	OTHER PARTIES	
	NONE		NONE OCT 16 M
			TI6 EM
			œ ⊖
	Ltr. Dtd. //19/04		Japan
APPLICANT'S REF. N			
QUANTITY	The licensee is authorized to export a form of gas and other deuterium com	2,500.0 kilogra pounds.	ims deuterium oxide (heavy water) in th
	The shipment of Canadian material is		
	License re-issued to include Sigma-A consignee.		awa, Japan location as an ultimate
		XMAT0401, Ar	nendment No. 01, continued on Page 3
otherwise transferred in	or any right under this license shall be assigned or n violation of the provisions of the Atomic Energy ded and the Energy Reorganization Act of 1974.		CENSE IS INVALID UNLESS SIGNED BELOW AUTHORIZED NRC BEPRESENTATIVE
This license is subject to	o the right of recepture or control by Section 108 of		aker, Deputy Director ernational Programs
THE ATOMIC PRRIVE ACT	of 1954, as amended and to all of the other provi- w or hereafter in effect and to all valid rules and		

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XMAT0401 Amendment No. 01 02 Page 2 of 3

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Continued from Page 1

ULTIMATE FOREIGN CONSIGNEES:

- 1. Sigma-Aldrich Japan KK 2-2-24 Higashi-Shinagawa Shinagawa-Ku 140002 Japan
- 2. Nippon Sanso Corporation 4-320-1 Tsukagoshi Saiwal-Ku Kawasaki 210-8509 Japan

Taiyo Nippen Sanse Corpetation Toyo Bidgo 1-3-26 Koyama Shiraganda-ku, Tokyo, 1428558 Japan

3. Sigma-Aldrich Japan KK 368 Oomachi Chiba-Ken 272 Ichikawa Japan

(For distribution into the medical, pharmaceutical, chemical and industrial markets for non-nuclear end use).

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Continued from Page 1

XMAT0401 Amendment No. 01 のこ Page 3 of 3

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DESCRIPTION OF MATERIALS OR FACILITIES:

The license is amended to: 1) extend the expiration date from July 31, 2004 to December 31, 2006; 2) change ultimate foreign consignee address from Sigma-Aldrich Japan K.K., Higashi Nihonbashi Sky Bldg., 1-1-7 Higashi-Nihonbashi Chuo Ku, Tokyo 103-0004 Japan, to Sigma-Aldrich Japan KK, 2-2-24 Higashi-Shinagawa, Shinagawa-Ku 140002 Japan; and 3) add Sigma-Aldrich Japan KK, 368 Oomachi, Chiba-Ken 272, Ichikawa, Japan as an additional location as an ultimate consignee.

All other conditions remain unchanged.

XMAT 0401/0. 1/005366

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U.S. NUCLEAR REGULATORY COMMISSION

INSTRUCTIONS FOR PREPARATION OF NRC FORM 7, APPLICATION FOR NRC EXPORT/IMPORT LICENSE, AMENDMENT OR RENEWAL

General Instructions: A completed, signed original NRC Form 7 may be mailed to the Deputy Director, Office of International Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or hand-delivered to the Deputy Director at 11555 Rockville Pike, Rockville, Maryland 20852.

Refer to Title 10 of the Code of Federal Regulations, Part 110, for specific NRC export/import licensing requirements. For each license, amendment or renewal application, identify all foreign and domestic locations where exports or imports will be handled, sorted, repackaged and/or processed in any way. Provide information on quantities, forms, and other characteristics of the radioactive materials, sealed sources, nuclear facilities and equipment to be exported or imported and indicate how they will be used by each of the parties listed. If more space is needed to complete any of the items on this form, use the continuation pages first, and then attach additional sheets. Reference appropriate BLOCK number(s) for each entry on all additional sheets. All applicants should avoid submitting proprietary information unless absolutely necessary, as NRC is required to make copies of all applications received available to the public. If proprietary information must be submitted, follow procedures in 10 CFF 2390, otherwise, such information could be publicly disclosed and/or processing of an application could be significantly deaved.

PART A. FOR NRC USE ONLY

PART B. TO BE COMPLETED BY ALL APPLICANTS

BLOCK 1. Enter name and complete physical address of the corporation or other entity with direct control over distribution of proposed export(s) or import(s), and where required records will be maintained and can be inspected. Post Office Box Numbers or names of divisions or departments within a legal entity are NOT acceptable entries for this BLOCK.

BLOCKS 1a-e. Provide name and contact information identifying the best party to answer questions about an application. Applicants should use BLOCK 1b to assign their own reference number to identify application documents.

BLOCK 2. Indicate the TYPE OF NRC LICENSING ACTION requested by checking:

- EXPORT if applying for a new export license.

- IMPORT if applying for a new import license.

- COMBINED EXPORT/IMPORT if applying for a new license to export one or more radioactive materials listed in 10 CFR 110, Appendix P, which will need to allow for the return of one or more of these materials to appropriate U.S. recipients.

- AMENDMENT/RENEWAL if applying to modify or extend an export, import or combined license previously issued by NRC (and not yet expired), include NRC license number in space provided. If NRC receives an amendment/ renewal application at least 30 days or more before the license expires, its terms will remain valid and, if circumstances permit, it can continue to be used until NRC completes action on the amendment/ renewal application.

BLOCK 3. If known, provide contract number(s), which may be useful references for example, if reviewers need to contact recipients or other parties listed on the application.

BLOCK 4. Enter the anticipated date of the first shipment (MM/DD/YYYY).

BLOCK 5. Enter the anticipated date of last shipment (MM/DD/YYYY).

BLOCK 6. Enter a proposed license expiration date (MM/DD/YYYY), to accommodate export activities. Note that NRC licenses are typically issued for 1-5 years.

NOTE: For amendments and renewals, provide only the new or changed information, as appropriate, in PART C and/or PART D. (For example, enter names and addesses of parties or consignees, only if they need to be added to, deleted from, or their information needs to be changed. If se<u>king</u> to increase the volume or quantity of material or equipment, specify the additional increment, and, if applicable, indicate what the new, combined cumulative total will be.)

PART C. TO BE COMPLETED BY APPLICANTS FOR EXPORT OR COMBINED LICENSES, AMENDMENTS OR RENEWALS

BLOCK 7. Enter names of supplier(s) and other parties to export not listed in BLOCKS 1, 8, OR 9. Provide complete physical address(es) where correspondence should be sent and where export(s) can be inspected. Post Office Box Numbers are NOT acceptable entries for this BLOCK.

BLOCK 7a. Describe functions to be performed and/or services to be provided by any parties listed in BLOCK 7.

BLOCKS 8-9. Enter names and physical address(es) for each intermediate and each ultimate foreign location. Post Office Box Numbers are NOT acceptable entries for these BLOCKS.

BLOCKS 8a and 9a. Describe how each consignee will use export(s), including functions to be performed and/or services to be provided.

BLOCK 10. Describe key characteristics including physical and chemical forms, etc., of radioactive materials (i.e., source, special nuclear or byproduct materials including sealed sources or devices and radioactive waste), nuclear facilities and equipment. Identify source material as natural or depleted uranium, or thorium, and provide chemical form (e.g., U308, Th-227). Identify and provide total volume in kilograms of ores containing 0.05% or more of source material (e.g., tantalum, niobium) and specify source material contained. Identify special nuclear material as plutonium, high enriched uranium (> 20% U-235) or low enriched uranium (<20% U-235) and specify chemical form.

Identify Appendix L byproduct materials by name and form, including maximum total quantities and types of sealed sources and/or devices to be exported over the license life. Identify Appendix P materials by name and form, including maximum total quantities and types of sealed sources and/or devices to be exported on a per shipment basis. For radioactive waste, identify and provide maximum total volume

XMAT0401 /02 11005366

in kilograms for each non-radioactive material involved, and physical and chemical forms for each radioactive material, along with the overall waste classification (see 10 CFR 61.55); route(s) of transit, forms of management and ultimate disposition. For nuclear facilities, provide total quantity; types; names, design power or annual capacity rating; and the estimated combined total dollar value. For nuclear equipment, identify all items by name, total quantity and function and provide the estimated combined total dollar value.

BLOCK 10a. For source material, provide maximum total volume/element weight over license life in kilograms. For special nuclear material, provide maximum total element weight over license life in kilograms. For each Appendix L byproduct material listed, provide maximum total activity over license life in Terabequerels (TBq). For each Appendix P material listed, provide maximum total activity per shipment in Tbq.

BLOCKS 10b-c. For special nuclear material including as radioactive waste, provide maximum weight % (enrichment) and total isotope weight over license life in kilograms.

BLOCK 11. Identify each country and the percentage of the maximum total volume that may be obligated to them (requires U.S. Government action, e.g., prior notification).

PART D. TO BE COMPLETED BY APPLICANTS FOR IMPORT OR COMBINED LICENSES, AMENDMENTS OR RENEWALS

BLOCK 12. Enter name(s) and address(es) of foreign supplier(s) or exporter(s).

BLOCK 12a. For import(s) originally exported under a specific NRC license, enter that license number.

BLOCKS 13 and 14. Complete if applicant in BLOCK 1 is not the sole intermediate or sole ultimate recipient. Provide complete physical mailing address(es) where correspondence should be sent and import(s) could be inspected. Post Office Box Numbers are NOT acceptable entries for this block.

BLOCKS 13a and 14a. Enter NRC or Agreement State Materials License number(s) including expiration date(s) (MM/DD/YYYY) for each U.S. consignee, authorizing receipt, possession, use or distribution.

BLOCKS 13b and 14b. Describe how each consignee listed will use proposed import(s), including functions to be performed and/or services to be provided.

BLOCK 15. Describe key characteristics including physical and chemical forms, etc., of radioactive materials (i.e., source, special nuclear or byproduct materials including sealed sources or devices and radioactive waste), and nuclear facilities. For radioactive waste, identify and provide maximum total volume in kilograms for each non-radioactive material (e.g., contaminated steel) involved, and physical and chemical forms for each radioactive source, special nuclear or byproduct material. Provide overall waste classification (see 10 CFR 61.55); responsible industrial process, route(s) of transit, and the status of arrangements for disposition in the U.S., e.g., any agreement by a low-level waste compact or State to accept for management or disposal. For Appendix P materials, identify by name and form, including maximum total quantities of any bulk materials and/or the maximum total quantities and types of sealed sources and/or devices per shipment. For nuclear facilities, provide total quantities; types; names, design power or annual capacity rating; and the estimated combined total dollar value.

BLOCK 15a. For source and/or special nuclear material, including that which is in the form of radioactive waste, provide maximum total volume/element weight over license life in kilograms. For Appendix L byproduct material, including that which is in the form of radioactive waste, provide maximum total activity over license life in TBq. For Appendix P radioactive materials, provide maximum total activity per shipment in Tbq for each material whether in bulk form or in a sealed source or device.

BLOCKS 15b-c. For special nuclear material including that which is in the form of radioactive waste, provide maximum enrichment/weight % and maximum total isotope weight over license life in kilograms.

BLOCK 16. Identify each country and the percentage of the maximum total volume that may be obligated to them (require U.S. Government action, e.g., prior notification).

PART E. TO BE COMPLETED BY ALL APPLICANTS

BLOCK 17. Check YES or NO to verify whether or not additional information is being provided using the space provided on the continuation pages and separate sheets.

BLOCK 17a. Check YES or NO to verify whether or not copies of domestic recipients' authorizations required for Appendix P materials (see Part 110.32 requirements) are included with the application.

BLOCKS 18a-c. An authorized official of the legal entity applying for the License, Amendment or Renewal, must certify the information provided, by signing the document, providing his/her title and the date of the application (MM/DD/YYY)

