DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD, SUITE 4616
FT. BELVOIR, VIRGINIA 22060-6220

REPLY
REFER TO DNSC-C1

May 22, 2003

Dear Prospective Offeror:

Attached is the solicitation for the Basic Ordering Agreement (BOA) for Tantalum materials including Columbium Metal. We appreciate all of the feedback from industry in response to the draft solicitation and our industry meeting. Details of the issues, comments, briefing charts as well as the BOA are located on the Tantalum link of the Defense National Stockpile Center (DNSC) homepage. The DNSC homepage address is: https://www.dnsc.dla.mil. Please review the solicitation and website carefully, because there are many changes based on DNSC's effort to streamline its sales processes.

The current projected schedule for Tantalum sales is:

Each Wednesday by 11:30 AM: Posting of Notice (Sale offering/No sale)
Each Monday by 11:30 AM: Price Quotes are due (If a sale offering was posted on Wednesday)

The first potential posting date is Wednesday, June 25, 2003, subject to market conditions. Only pre-qualified quoters will be eligible to participate. Once the BOA postings have begun, please plan to visit the website weekly after 11:30 AM each Wednesday morning to check for sales offerings. **This will be the only formal, regular notice that will be issued.** (If you ever have a connectivity problem, there are points of contact listed in the solicitation in Section.)

A press release will be issued and posted to the website at the end of each month. This release will include the total sold in the month, the approximate dollar value and the names of companies awarded material. No bid abstract will be sent or posted for each sale.

You are invited to begin the process to establish a BOA for your firm by submitting required documents as identified in Section B on page 5 and Section I on page 30 of the attached solicitation. You should also submit details of any exceptions to the terms of the solicitation (such as removal schedule) and any additional terms (such as payment terms) that you seek. When discussions and financial analysis have been completed, you will be notified of results, and if appropriate, a BOA for tantalum material will be issued to your firm**. The BOA pre-qualification process will be open continuously. However, your pre-qualification submission in response to this initial solicitation publication is requested at your earliest opportunity and, if possible, not later than June 13, 2003.**

If you have already submitted financial information, no additional submission is required but you should identify the previous submission in a cover letter. Please also note that submission of documents and establishing a BOA does not obligate you to offer under subsequent sales.

If you have any questions, please contact the undersigned by telephone at (703) 767-5487, by facsimile at (703) 767-5484 or by email at: jennifer.iribarren@dla.mil

Sincerely,

//s//

JENNIFER P. IRIBARREN
Contracting Officer

Issued: **May 21, 2003**

DLA-TANTALUM-001

BASIC ORDERING AGREEMENT (BOA) FOR TANTALUM MATERIALS

Defense Logistics Agency
Defense National Stockpile Center
8725 John J. Kingman Road, Suite 3229
Fort Belvoir, VA 22060-6223

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BASIC ORDERING AGREEMENT
BETWEEN THE
UNITED STATES OF AMERICA
AND

_____

This Agreement governing the sale of tantalum under Basic Ordering Agreement, DLA-TANTALUM-001 (the BOA), is entered into as of the _____ day of _____ 20____ between the United States of America, represented by the Contracting Officer, and _____ represented by _____.

This Agreement shall be effective upon signature by the Contracting Officer and shall incorporate the terms of the Acceptance Letter. The terms and conditions of any subsequent sale of material are as set forth in the BOA, which shall be incorporated into each contract awarded pursuant to this Agreement unless otherwise specified in the Acceptance Letter or the executed Quote/Award Form (Section I.1). In the event of a conflict between the BOA, the Acceptance Letter or the executed Quote/Award Form, the terms of the executed Quote/Award Form shall govern.

An executed copy of this Agreement shall be returned to the Contractor.

_____	United States of America
(Company Name)	
By: _____	By: _____
Signature	Signature
_____	_____
Name of Signer	Name of Contracting Officer
_____	
Title of Signer	
_____	_____
Date Signed	Date Signed

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BASIC ORDERING AGREEMENT

TABLE OF CONTENTS

SECTION A – AGREEMENT/CONTRACT FORM 1
- A.1 Introduction (JUN 99) 1
- A.2 Basic Ordering Agreement (BOA) (JUN 99) 1
- A.3 Web Page (JUN 99) 1
- A.4 Material Description (JAN 95) 1
- A.5 Financial Exposure Limit (MAR 02) 3
- A.6 Payment Terms (JAN 02) 3
- A.7 Foreign Trade Statistics Regulations (MAR 02) 3
- A.8 Nuclear Regulatory Commission License – Category 2 Tantalum/Columbium Concentrates Materials (FEB 03) 4

SECTION B – PREQUALIFICATION (JUN 99) 5

SECTION C – QUOTES 7
- C.1 Submission of Quotes (JUN 99) 7
- C.2 Web Site Information (JAN 02) 8
- C.3 Minimum Quantity (JUN 99) 8
- C.4 Late Submissions, and Modifications of Quotes (JUN 99) 9
- C.5 Facsimile Submissions (JUN 99) 9
- C.6 Consideration of Quotes (JUN 99) 10
- C.7 Evaluation of Quotes (JUN 99) 11
- C.8 Responsiveness of Quotes (MAY 03) 11
- C.9 Tie Quote Procedures (JUN 99) 11
- C.10 Contract Award (JUN 99) 12
- C.11 Unsuccessful Quoters (JUN 99) 12

SECTION D – PAYMENT 13
- D.1 Payment (FEB 98) 13
- D.2 Payment Due Date (NOV 02) 14
- D.3 Interest (JUN 02) 14

SECTION E – MATERIAL REMOVAL 15
- E.1 Removal of Material (JAN 02) 15
- E.2 Storage Charges (JUL 97) 15

SECTION F –SHIPPING 17
- F.1 Request for Shipment (JAN 02) 17
- F.2 Insurance Requirements (APR 95) 18
- F.3 Weighing (APR 02) 19
- F.4 Weight Discrepancy (MAY 03) 19
- F.5 Assumption of Risk and Disclaimer of Liability (JAN 02) 19
- F.6 Adjustment for Variation in Quantity or Weight (JAN 95) 19
- F.7 Environmental Protection (Includes Category 2 Tantalum Material) (MAY 03) 20

SECTION G – CONTRACT ADMINISTRATION DATA 22
- G.1 Effective Period (JUN 99) 22
- G.2 Amendments and Modifications (JAN 95) 22
- G.3 Title (JUL 02) 22
- G.4 Risk of Loss (JUL 02) 22
- G.5 Limitation on Government's Liability (JAN 95) 22
- G.6 Protests (NOV 02) 23
- G.7 Disputes (MAY 03) 24
- G.8 Default (MAY 03) 25
- G.9 Termination for Convenience of the Government (DEC 97) 26
- G.10 Excusable Delays (MAY 95) 26
- G.11 Setoff of Funds (JUL 98) 27
- G.12 Indemnification Agreement (JAN 02) 27

G.13 Covenant Against Contingent Fees (JAN 95) 27
SECTION H – DEFINITIONS (APR 02) 29
SECTION I – SUBMITTALS 30
I.1 Quote/Award Form (FEB 03) 31
I.2 Shopping List (FEB 03) 32
I.2.1 Shopping List for Columbium Metal Ingots, Vacuum Grade (FEB 03) 65
I.3 Certificate of Independent Price Determination (JAN 02) 67
I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, Environmental Compliance and Other Responsibility Matters (JUL 97) 67
I.5 Type of Business Organization (APR 96) 69
I.6 Persons Authorized to Request Shipment of Material (FEB 98) 70
I.7 Contractor's Billing Address (JUL 96) 71
SECTION J – LIST OF ATTACHMENTS 72
J.1 Material Analysis 74
J.2 Storage Locations (MAY 03) 95
J.3 Shipping Instructions (JAN 95) 96
J.4 Material Safety Data Sheets (OCT 02) 98
J.5 Fedwire Procedures (JAN 95) 151

SECTION A – AGREEMENT/CONTRACT FORM

A.1 Introduction (JUN 99)

The Defense Logistics Agency (DLA), Defense National Stockpile Center (DNSC) has the authority to sell the following Tantalum and Columbium materials in Fiscal Year 2003:

Tantalum Carbide Powder – 4,000 Pounds (LB) contained Tantalum (Ta)
Tantalum Metal Ingots (Vacuum Grade) – 40,000 LB Ta
Tantalum Metal Powder (Capacitor Grade) – 50,000 LB Ta
Tantalum Oxide – 20,000 LB Ta
Tantalum Minerals (includes Columbium Concentrates) – 500,000 LB Ta
Columbium Metal Ingots – 20,000 LB contained Columbium (Cb)

A.2 Basic Ordering Agreement (BOA) (JUN 99)

a. The terms and conditions of this Basic Ordering Agreement shall be incorporated in any resulting contract, unless otherwise specified in the Acceptance Letter or the Quote/Award Form, I.1.

b. Contracts awarded under this Agreement shall be fixed price.

c. An executed **Section I.1 Quote/Award Form**, signed by a Contracting Officer, together with this Agreement and the Acceptance Letter shall constitute the Contract.

A.3 Web Page (JUN 99)

All requests for quotes under this Agreement shall be posted on the DNSC web site on Wednesdays by 11:30 a.m. local time, Ft. Belvoir, VA at **https://www.dnsc.dla.mil**. Quoters shall check the web site every Wednesday morning to determine if DNSC is soliciting quotes for that day.

A.4 Material Description (JAN 95)

a. (1) Tantalum Carbide Powder – The Tantalum Carbide Powder offered for sale was acquired in 1963 from Wah Chang or Kennametal. The material is packaged in polyethylene liners inserted in 5 quart drums. Six drums are packed in a polyethylene lined cleated wooden box. Each lot consists of 3 wooden boxes. Drum weights are 50 pounds for Kennametal brand and 75 pounds for Wah Chang brand material. The material was acquired to the National Defense Stockpile Purchase Specification P-106-R.

(2) Tantalum Metal, Vacuum Grade – Type 2 Tantalum Metal Ingots were produced by H.C. Starck or Cabot Corporation between 1992 and 1995. Sizes of ingots

vary with producer. H.C. Starck ingots are 7 inches to 8 inches in diameter by 40 inches long. Net weight of the ingots ranges from 2,060 to 2,312 pounds each. Cabot Corporation ingots are 8.5 inches to 9.5 inches in diameter by 40 inches long. Net weight ranges from 3,010 to 3,420 pounds each. All ingots are cut in half and stored as 2 pieces on a 40 inch by 48 inch cradle which equates to an average size pallet. The material was acquired to the National Defense Stockpile Purchase Specification P-117.

(3) Tantalum Metal, Capacitor Grade – Tantalum Metal, Capacitor Grade, is in the form of powder, ingots, and slabs. The powder is divided into Grades 1 through 5 based on the powder's oxygen content, bulk density, particle size, range of sintering time and electrical properties. The ingots and slabs are Grade 6 and 7, respectively. Tantalum powder is stored in one quart polyethylene bottles, containing ten (10) pounds of powder each. Powder is treated with argon gas to minimize oxidation during long term storage. Twelve (12) bottles are packed to a wooden case. Weight of a wooden case is 120 pounds each. Tantalum ingots and slabs are stored in polyethylene bags in wooden boxes not to exceed 500 pounds each. Ingots have a maximum diameter of 5 inches and a minimum length of 12 inches and weigh from 50 to 250 pounds each. The slabs are between 2 inches by 5 inches by 13 inches or 2 inches by 10 inches by 26 inches. The material meets National Defense Stockpile Purchase Specification P-104-R4. The material was originally acquired between the early 1960's through the mid 1970's.

(4) Tantalum Oxide – The Tantalum Oxide was acquired during 1992-1993 from O'Dell Construction Co., Prattville, AL and was produced in Germany by H. C. Starck. The material ranges in purity from 99.68% to 99.99% Ta_2O_5 and the particle size is 100%- 30 mesh and a maximum of 5% + 80 mesh. Material is packaged in plastic liners in 30 gallon hot dipped galvanized drums. Drums are palletized four (4) drums to a 40 inch by 48 inch pallet and are ready for shipment. A lot consists of 82 drums and has a bulk weight of approximately 25,000 pounds (205 pounds per drum). The material meets National Defense Stockpile Purchase Specification P-113a-R.

(5) Tantalum/Columbium Concentrates – Tantalum/Columbium Concentrates were acquired in 1981 and 1984. Material is stored in galvanized steel drums, four (4) drums to a pallet. Material is separated into two categories, Category 1 and Category 2. Category 1 material has less than 0.05% combined Thorium (Th) and Uranium (U). Category 2 material has combined Th and U equal to or greater than 0.05%. Category 2 requires a Nuclear Regulatory Commission (NRC) license. See Sections A.8 and B.2.c. The material meets National Defense Stockpile Purchase Specification P-113a-R.

(6) Columbium Metal - The Columbium metal offered for sale is sold as contained Columbium (Cb), Metal Vacuum Grade. This material is in ingot form which was cleaned (skinned) to eliminate any grain boundary voids, pits, cracks, cold shuts, etc. and has a machined finish. All ingots are solid and sound and have no shrinkage cavities or incompletely melted metal on any part of the surface of the metal. Only Type 2, ingot, with a minimum purity of 99.6% Cb is in the stockpile for offerings. Typical ingot dimensions are 6 or 11 inch diameter times 40 inch length. The ingots have been cut in half for storage purposes. Each ingot is marked with the name or the chemical

symbol and a lot number. The ingots vary in weight and size. The net weight ranges from 1,185 pounds to 2,649 pounds. Columbium metal ingots are palletized 2 pieces per lot on a 40 inch by 48 inch cradle pallet. This material was produced by H.C. Starck and Cabot Corp. in 1992. The material meets National Defense Stockpile Purchase Specification P-116.

b. Government records indicate that the material conforms to the data provided in the above paragraphs, Sections I.2 and I.2.1, and Sections J.1, J.1.1; however, no warranty or guarantee is made that the material so conforms or that it will be suitable for any particular purpose.

A.5 Financial Exposure Limit (MAR 02)

a. DNSC will establish a financial exposure limit (maximum level of business DNSC will allow) for each Quoter. The financial exposure limit shall be determined based upon the following:

(1) Financial Position of the Quoter
(2) Past Performance
(3) References (Suppliers, Financial Institutions)
(4) Credit Reports

b. If the Contractor reaches its financial exposure limit, subsequent sales will cease until either the Contractor satisfactorily performs existing contracts or DNSC increases the exposure limit.

A.6 Payment Terms (JAN 02)

The maximum acceptable payment terms are net thirty (30) days from DNSC's receipt of current, accurate, and complete Shipping Instructions.

Note: The following Section A.7 does not apply to Category 2 material. Category 2 material is not eligible for export from existing storage.

A.7 Foreign Trade Statistics Regulations (MAR 02)

a. The Contractor shall determine any export license requirements, obtain any export licenses or other official authorization required for export, and carry out any US Customs formalities for the export of any material awarded under this Agreement.

b. The Contractor shall comply with United States Bureau of Export Administration Foreign Trade Statistics and Export Administration Regulations as set forth in 15 CFR Parts 30 and 732 (as amended by 65 Federal Register (FR) 42556-42575, July 10, 2000 or any subsequent rule making).

c. If the Contractor is not a United States domestic entity or does not have a physical presence in the United States, and the material is to be exported, the Contractor shall either—

(1) Engage a United States Forwarding Agent or other agent in accordance with 15 CFR 30.4(a) and (c); or

(2) Engage a United States Order Party, in accordance with 15 CFR 30.4(a)(1)(iii), to conduct all negotiations, correspondence, and arrangements for sale, and to arrange for export of the material purchased.

d. The Defense National Stockpile Center shall not be named as the United States Principal Party in Interest and will not execute any Shipper's Export Declaration required by the Foreign Trade Statistics regulations.

A.8 Nuclear Regulatory Commission License – Category 2 Tantalum/Columbium Concentrates Materials (FEB 03)

a. Category 2 Tantalum/Columbium Concentrates material is regulated by the U.S. Nuclear Regulatory Commission (NRC) as source material because it contains by weight 0.05 percent or more of uranium or thorium or a combination thereof. As such, an NRC specific source material license is required to receive, possess, deliver, use, or transfer the material pursuant to 10 CFR Part 40.

b. During the prequalification phase pursuant to Section B, quoters must provide DNSC with a current NRC specific source materials license if the Quoter intends to quote on the Tantalum/Columbium Concentrates, Category 2 material.

c. The failure to submit a NRC license will render the quoter non-responsive for any quotes for Category 2 material. Any questions regarding licensing of source material shall be directed to the Office of General Counsel at the NRC at telephone number (301) 415-1888.

d. Category 2 material is not eligible for export from storage in existing containers. Quoters may repackage material, as warranted by DOT regulations, at their own expense for overseas shipments.

SECTION B – PREQUALIFICATION (JUN 99)

1. Quoters must be pre-qualified in order to submit quotes and be considered for award. Quoters must also receive pre-approval for payment terms.

2. Quoters shall complete the following documents and submit them to the address shown in **paragraph 4**, below:

   a. **Basic Ordering Agreement**; (see Page 2);

   b. **Sections I.4 through I.7**; and

   c. **Nuclear Regulatory Commission License in order to prequalify to submit quotes on Category 2 Tantalum/Columbium Concentrates**. (See Section A.8.)

3. Quoters shall submit copies of the most recent income statement and balance sheet for the company and any other documentation that will verify their financial level of business transactions; e.g., a list of references.

4. Quoters shall submit the documentation to the following address/facsimile number:

   Defense National Stockpile Center
   Attn: Tantalum Contract Specialist, DNSC-C1
   8725 John J. Kingman Road
   Suite 3229
   Fort Belvoir, Virginia 22060-6223
   Fax: (703) 767-5494/703-767-5484

5. The Government will evaluate the documentation to determine whether or not the Quoter is considered responsible and eligible for award and whether DNSC will extend payment terms if requested to do so. Quoters will not be pre-qualified or eligible for payment terms unless the Contracting Officer makes an affirmative determination of responsibility.

6. To be determined responsible, Quoters shall have adequate financial resources, a satisfactory performance record, and a satisfactory record of integrity and ethics. For example, a Quoter may be determined to be non-responsible and ineligible to submit quotes under this Agreement if there is a record of poor payment (e.g., checks returned for insufficient funds) or poor performance (e.g., failure to pay for or remove material on time). In addition to looking at past performance, DNSC will also review the current Dun & Bradstreet report.

7. If the Contracting Officer determines that the Quoter is responsible, the Contracting Officer will sign the Agreement and return one copy to the Quoter. The Contracting Officer will also transmit an Acceptance Letter that will set forth the financial exposure limit and identify whether or not any specially requested terms have been granted.

8. The Quoter will not be eligible to submit quotes until receipt of the Agreement signed by the Contracting Officer.

9. DNSC may require the Contractor to submit updated information at any time during the Agreement period.

10. Quoters shall be required to re-qualify annually.

SECTION C – QUOTES

C.1 Submission of Quotes (JUN 99)

a. The Government will post any material being offered for sale on its web site at **https://www.dnsc.dla.mil** on Wednesdays by 11:30 a.m., local time, Ft. Belvoir, Virginia.

b. All pre-qualified Quoters are invited to quote.

c. Quotes and modifications shall be submitted by facsimile in accordance with **Section C.5, Facsimile Submissions**.

d. Quoters shall submit quotes on **Section I.1, Quote/Award Form**. Quotes shall be faxed to (703) 767-5541, Attention: Tantalum Contract Specialist.

e. **Section I.1, Quote/Award Form** shall include the date of the Request for Quote and shall contain the following additional information:

(1) Item;

(2) Commodity Description and Location;

(3) Quantity;

(4) Unit price LB Ta (except Tantalum Oxide which is sold in LB, Tantalum/ Columbium Concentrates which is sold in LB Ta_2O_5, and Columbium Metal which is sold in LB Cb);

(5) Total price;

(6) Company name;

(7) Title and signature of authorized Contractor's representative; and

(8) Initials signifying compliance with I.3 and I.4.

f. Quoters seeking to alter the provisions of the BOA or other terms previously agreed upon shall be considered nonresponsive and ineligible for award.

g. Quotes must be received by 11:30 a.m., local time, Ft. Belvoir, Virginia the third business day following the Offering (Monday, if no holiday or closing occurs between Wednesday's posting and the following Monday) and shall remain valid until two business days after the time set for receipt of quotes.

h. If its quote is accepted by the Government by the time set in paragraph g., above, after receipt of quotes, the Quoter agrees to purchase any or all material quoted on at the price quoted and to take delivery within the removal period specified in the executed **Section I.1, Quote/Award Form**.

C.2 Web Site Information (JAN 02)

a. The Government shall not be responsible for any technical problems related to the publication of the Request for Quotes on the Internet, including but not limited to, any difficulties in accessing the site.

b. Quoters experiencing problems accessing the web site should contact the following:

Thomas White (703) 767-6516

c. Quoters needing additional information on sales for any given day should contact one of the following numbers for the Contracting Officer identified:

Jennifer Iribarren (703) 767-5487
DNSC Contracting (703) 767-6500

d. The Government shall not be responsible for any technical problems related to the publication of the Requests for Quotes on the Internet, including but not limited to difficulties encountered by Quoters in attempting to access the requests. Widespread access difficulties or other compromises of the Quote process may provide grounds for canceling a Request for Quotes.

e. Note: Adobe Acrobat Reader is required to view the attachments on the web site (i.e. Basic Ordering Agreement, Quote Form.) Adobe Acrobat Reader is available to download through the Internet at www.adobe.com. There is no charge to download this program.

C.3 Minimum Quantity (JUN 99)

Quotes shall be submitted for a minimum of one (1) line item unless otherwise stated on the web site.

C.4 Late Submissions, and Modifications of Quotes (JUN 99)

a. Any quote received at the office designated in the Agreement after the exact time specified for receipt of quotes will not be considered unless it is received before award is made and –

(1) There is acceptable evidence to establish that it was received at the activity designated for receipt of quotes and was under the Government's control prior to the time set for receipt of quotes, and the Contracting Officer determines that accepting the late quote would not unduly delay the sale; or

(2) It is the only quote received.

b. Any modification to a quote, including a modification resulting from the Contracting Officer's request for confirmation, is subject to the same conditions stated in **paragraph a**. of this provision.

c. The only acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of the facsimile machine or oral testimony or statement of Government personnel.

d. Notwithstanding **paragraph a**. of this provision, a late modification of an otherwise successful quote that makes its terms more favorable to the Government will be considered if it is received at any time prior to award and may be accepted.

e. If an emergency or unanticipated event interrupts normal Government processes so that quotes cannot be received at the office designated for receipt of quotes by the exact time specified in the Agreement and the Government is unable to provide timely notice of an extension of the time set for receipt of quotes, the Request for Quote for that day will be deemed cancelled.

C.5 Facsimile Submissions (JUN 99)

Facsimile quotes and modifications will be accepted any time prior to the exact time set for receipt of quotes. Facsimile withdrawals will be accepted any time before the time set for receipt of quotes. **Quoters must submit quotes to facsimile number (703) 767-5541.**

a. Definition: "Facsimile submission," as used in this Agreement, means a written quote, modification of a quote, or withdrawal of a quote that is transmitted to and received by the Government via electronic equipment that communicates and reproduces both printed and handwritten material.

b. Quoters must submit facsimile submissions as a response to this Agreement. These responses must arrive at the designated place, by the time specified in the Agreement.

c. Facsimile submissions that fail to furnish required information, that reject any of the terms, conditions, and provision of the Agreement, that contain garbled information, or are otherwise incomplete, may be excluded from consideration.

d. Facsimile submissions must contain the required signatures.

e. The Government reserves the right to make award solely on the facsimile submission. However, if requested to do so by the Contracting Officer, the apparently successful Quoter agrees to promptly submit the complete original signed submission.

f. The Government will not be responsible for any failure attributable to the transmission or receipt of the facsimile submission including, but not limited to, the following:

(1) Receipt of garbled or incomplete submission;

(2) Availability or condition of the receiving facsimile equipment;

(3) Incompatibility between the sending and receiving equipment;

(4) Delay in transmission or receipt of submission;

(5) Failure of the Quoter to properly identify the submission;

(6) Illegibility of submission; or

(7) Security of submission data.

C.6 Consideration of Quotes (JUN 99)

a. The Government reserves the right to –

(1) Reject any or all quotes;

(2) Waive any informalities and minor irregularities in a quote;

(3) Award a quantity less than the quantity quoted at the unit price quoted;

(4) Accept any one item or group of items in a quote, as may be in the best interest of the Government;

b. Quoters may submit multiple quotes for multiple quantities at various unit prices and may specify a maximum quantity.

C.7 Evaluation of Quotes (JUN 99)

a. Quotes will be evaluated on the basis of prices offered as may be adjusted by any special terms previously negotiated.

b. To participate in sales and be considered for award, Quoters must be pre-qualified in accordance with **Section B**.

C.8 Responsiveness of Quotes (MAY 03)

a. To be considered for award, quotes must be responsive. A responsive quote is one that **fully complies** with the terms of the Agreement and in which the intent of the Quoter is clear on its face.

b. A quote must clearly state the unit price (fixed price only) for each line item.

c. Any quote that requires the Government to exercise judgment with respect to quantity or price will result in the quote being considered nonresponsive and ineligible for award. For example, failure to fill in the unit price for **each** line item on the Quote/Award Form for which a quote is submitted may result in the quote(s) being considered nonresponsive and ineligible for award. Additionally, if there is a discrepancy between the unit price and extended price, the unit price governs.

d. Any quote submitted for less than the minimum quantity set forth in C.3 will be considered nonresponsive.

e. Any quote that does not include **I.1 Award/Quote Form** fully executed (filled out and signed) will be considered nonresponsive unless:

(1) The Quoter accepts all terms and conditions of the Agreement; and

(2) Award on the quote would result in a binding contract with terms and conditions that do not vary from the terms and conditions of this Agreement.

f. Quotes that reject, modify or add terms, conditions or provisions shall be considered nonresponsive and ineligible for award.

C.9 Tie Quote Procedures (JUN 99)

In the event that quotes of an equal unit price are received for the same quantity of material, lots will be drawn to determine the successful quoter for the material.

C.10 Contract Award (JUN 99)

A written award or acceptance of a quote signed by the Contracting Officer and furnished to the successful Quoter(s) within two business days of the time set for receipt of quotes (as specified in paragraph g of **Section C.1**) shall result in a binding contract incorporating all the terms and conditions of the Agreement unless otherwise stated in the executed **Section I.1 Quote/Award Form**.

C.11 Unsuccessful Quoters (JUN 99)

The Contract Specialist will notify unsuccessful Quoters telephonically at the earliest practicable time.

SECTION D – PAYMENT

D.1 Payment (FEB 98)

a. Payment shall be made in U.S. dollars.

b. Payment shall be made by wire transfer, U.S. Postal Service money order, company or bank check.

(1) Wire transfer payment shall be made in accordance with instructions in Section J.5. Fees for wire transfers are the responsibility of the Contractor. If payment is by wire transfer and the wrong account number is used, shipment of material may be delayed by up to one week or the wire transfer may be returned to the sender.

(2) All checks must be drawn on a U.S. domestic bank or on a United States branch of an acceptable foreign bank and must be payable in United States currency. **A service charge of $100.00 will be applied to all returned checks.**

c. Payment shall be made to the **Defense Finance and Accounting Service – Columbus (DFAS – Columbus)**. If a check is not made payable to DFAS – Columbus, the check may be returned and the $100.00 fee stated in Section **D.1. paragraph b(2)** charged. Payment shall be accompanied by **identifying information including the contract number, invoice number (if any), and a description of the material purchased.** Payments without the required identification may be returned and shipment delayed. Payments shall be sent to:

ATTN: DNSC-R, Accounts Receivable
Defense National Stockpile Center
8725 John J. Kingman Road
Suite 3229
Fort Belvoir, Virginia 22060-6223

d. Invoices issued for adjustments for variations in quantity or weight, storage charges, or interest shall be paid promptly.

e. If payment is not made in full within 30 calendar days of issuance of an invoice, the Government will issue a “demand” letter, demanding payment of the outstanding amount. If all monies due are not paid within 30 calendar days after the date of the Government’s demand letter, the Contractor will be considered delinquent and any outstanding charges will be reduced by any subsequent payments. No material will be shipped until all delinquent charges are paid. (**See Sections F.1a. and G.11**).

D.2 Payment Due Date (NOV 02)

a. Payment due dates will be applied as follows:

(1) If payment terms are not extended, payment will be made before shipment of material and before the end of the contract period specified in the executed **Section I.1 Quote/Award Form**.

(2) If payment terms are approved, then the Contractor shall pay the Government the full amount of **each** shipment no later than 30 calendar days after DNSC receives current, accurate, and complete Shipping Instructions. Notwithstanding any other provision of the Agreement, payment is due with or without the issuance of an invoice by the Government. If the Contractor fails to make payment timely, the Contractor will be considered delinquent (see Section D.1.e, F.1.a, and G.11), and the Government, at its sole discretion, may revoke payment terms and take other appropriate action in accordance with Section G.8. DNSC will monitor payment terms closely.

b. If payment is not received by 4:30 p.m. local time Fort Belvoir, VA, on the payment due date, payment will not be credited until the next Government business day. Interest will accrue accordingly.

c. In the event the payment due date falls on a Saturday, Sunday, or holiday, then the payment due date will be extended to the next Government business day.

D.3 Interest (JUN 02)

a. All amounts that become payable by the Contractor to the Government under this contract shall bear simple interest from the date due until paid. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in 41 U.S.C. 611, which is applicable to the period in which the amount becomes due, as provided in paragraph b. below.

b. Amounts shall be due at the earliest of the following dates:

(1) The final day of the contract period specified in Section I.1 Quote/Award Form with or without issuance of an invoice by the Government; or

(2) The date of the first written demand for payment under the contract.

SECTION E – MATERIAL REMOVAL

E.1 Removal of Material (JAN 02)

a. For all materials except Tantalum/Columbium Concentrates, the contract period begins on the date of contract award and shall expire thirty (30) calendar days from the date of contract award. For the Tantalum/Columbium Concentrates, the contract period begins on the date of contract award and shall expire ninety (90) calendar days from the date of contract award.

b. If the Contractor fails to pay for and remove the material on or before the last day of the contract period, the Contractor will be considered delinquent and no material will be shipped until payment has been received.

c. The contract period includes Saturday, Sunday, and holidays. If the last day of the contract removal period is a Saturday, Sunday, holiday, or the storage location is otherwise closed that day, the period of contract period will be extended to the next Government workday.

E.2 Storage Charges (JUL 97)

a. Storage charges shall be assessed on all material remaining after the last day of the contract period. The Government reserves the right to remove any remaining material to a commercial storage facility and be reimbursed by the Contractor for any expenses incurred. Storage charges continue to accrue until all the material has been removed or the contract is terminated for default, in which case the Contractor will be liable for damages, as set forth in **Section G.8, Default** of the Solicitation.

b. For each 30 day period, regardless of whether the material remains in storage for a period of 30 days or less than 30 days, the storage charges are the greater of the following:

(1) (i) Tantalum Carbide Powder, $0.032 per LBTa or fraction thereof;
(ii)Tantalum Oxide, $0.03 per LB or fraction thereof,
(iii)Tantalum Minerals (includes Columbium Concentrates) $0.0834 per LB Ta_2O_5 or fraction thereof;
(iv)Tantalum Metal Ingots (Vacuum Grade) and Tantalum Metal Powder (Capacitor Grade) $0.003 per LB Ta or fraction thereof; and
(v) Columbium Metal Ingots, $0.005 LB Cb or fraction thereof,
per 30 day period regardless of whether the material remains in storage for a period of 30 days or less than 30 days; or

(2) Commercial storage charges, if applicable.

b. Storage charges will be invoiced upon shipment. Payment shall be made promptly.

c. Payment of storage charges shall not relieve the Contractor of its obligation to remove the material in a timely manner. Acceptance of storage payments by the Government is not a waiver of the Government's right to default the Contractor for failure to remove the material. (**See Section G.8, Default**).

SECTION F –SHIPPING

F.1 Request for Shipment (JAN 02)

a. Delivery is F.O.B. carrier's conveyance. At least five (5) working days prior to the date the shipment is required to commence, the Contractor shall furnish commercial bills of lading to the designated depot. Simultaneously, the Contractor shall complete and fax the form in **Section J.3 Shipping Instructions** to the Contracting Officer. The Government will only accept shipping instructions from those individuals designated in **Section I.6, Persons Authorized to Request Shipment of Material,** as being authorized to release material on behalf of the Contractor. **No material will be released under the provisions of this contract or any other contract the Contractor has with the DNSC until all outstanding delinquent charges and payments have been satisfied.**

b. "Shipping Instructions" shall include the following:

(1) Quantity of material to be shipped.

(2) Designation of type and kind of conveyance.

(3) Name of carrier (please include a telephone number where this contact can be reached).

(4) "Ship to" location.

(5) Minimum load per conveyance (optional).

(6) Desired shipping schedule.

(7) Name and telephone number of an agent who can furnish additional shipping information if needed.

(8) Any additional pertinent information.

c. The shipping schedule shall allow sufficient time for the Government to reasonably meet the schedule prior to the last day of the contract period commensurate with existing loading facilities and other commitments at the Government's storage locations. Information regarding Government commitments may be obtained from the address specified in Section **J.2 Storage Location.**

d. The Government will provide the lumber and nails from available depot stock, if requested by the Contractor's designee/driver. The Contractor's designee shall perform any necessary procedure(s) to ensure the cargo is safely

secured prior to leaving the depot. The Government will **not** block, chock, brace, lash, band, or in any manner secure the cargo on the Contractor's conveyance(s). The designee shall witness the loading. Any expenses over and above those normally incurred by the Government to meet the public carrier's requirements for loading like materials will be at the expense of the Contractor.

e. The Contractor, its agent and employees, shall comply with all applicable rules at the storage depot, Federal, state and local load limitations, and all safety, health, and environmental requirements.

f. Requests for shipment shall be for a minimum of one truck load, or if the remaining balance is less than a truck load, then for the balance at the location or on the contract. Shipping instructions and information requested in paragraph **a.**, above, are to be furnished to the following address:

Defense National Stockpile Center
ATTN: Tantalum Contract Specialist
8725 John J. Kingman Road
Suite 3229
Fort Belvoir, VA 22060-6223
Facsimile Number: (703) 767-5494/767-5484

g. The Government shall determine the order in which the material is scheduled, coordinated and outloaded.

F.2 Insurance Requirements (APR 95)

The Contractor shall procure and maintain, and require any subcontractor to procure and maintain, during the entire period of performance under this contract, such insurance as stipulated herein.

a. Workers' compensation and employer's liability. The Contractor is required to comply with applicable Federal and State workers' compensation and occupational disease statutes. Employer's liability coverage of at least $100,000 is required, except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

b. General liability. Bodily injury liability insurance coverage written on the comprehensive form of policy of at least $500,000 per occurrence.

c. Automobile liability insurance written on the comprehensive form of policy is required. The policy shall provide for bodily injury and property damage liability covering the operation of all automobiles used in connection with performing the contract. Policies covering automobiles operated in the United States shall provide coverage of at least $200,000 per person and $500,000 per occurrence for bodily injury and $20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

F.3 Weighing (APR 02)

a. No outweighing of material will be performed by the Government. The Government weights of record shall govern. The Contractor may elect to have a representative present to witness the outloading.

b. Weight certificates shall be provided at the expense of the Government and will be final for payment purposes.

c. In the event that any broken containers are detected at time of shipment, they will be overpackaged by the Government at the Government's expense prior to outloading. If no loss is discernible, the Government's weight of record shall govern for that item and shall be final for payment.

F.4 Weight Discrepancy (MAY 03)

a. If the Contractor's weights for the material delivered vary from the Government's certified weights by more than *one-half of one percent per shipment*, the Contractor may give written notice of the difference to the Contracting Officer within fifteen (15) business days (exclusive of Saturdays, Sundays, and Government holidays) after receipt of the material at destination, requesting that the material be reweighed. In that case, the Contractor shall segregate the shipment in question and hold it intact pending reweighing. The entire shipment shall be reweighed by the Contractor at its expense, in the presence of and in the manner approved by a Government representative, using scales approved by the Government representative. If the weight varies from the Government's certified weight by greater than one-fourth of one percent, plus or minus, that weight shall govern for payment purposes. If the weight determined by reweighing does not vary from the Government's certified weight by greater than *one-fourth of one percent*, plus or minus, the Government's certified weight shall be final for payment purposes.

b. No adjustment shall be considered or made in accordance with the above paragraph unless notice is given by the Contractor to the Contracting Officer within the time specified above and all other requirements of the paragraph are completed.

F.5 Assumption of Risk and Disclaimer of Liability (JAN 02)

The Contractor, its assigns or agents, assumes full responsibility for all injury or damage to persons or property occasioned by or occurring in connection with or incident to any use or possession of this material by the Contractor, Contractor's employees, or any person subject to the Contractor's control. The Government assumes no liability for any damages to the property of the Contractor, any other person or property, or for any personal injury, illness, disability or death to the Contractor, Contractor's employees or any other person subject to the Contractor's control, or for any other consequential damages arising from or incident to the purchase, use, loading, processing, disposition, or any subsequent operation performed upon, exposure to or contact with any component, part, constituent or ingredient of this item, material or substance.

F.6 Adjustment for Variation in Quantity or Weight (JAN 95)

The Government reserves the right to vary the quantity or weight delivered by the following: 10% from the quantity or weight listed in the solicitation for Columbium Metal;

5% from the quantity or weight listed in the solicitation for Tantalum Carbide Powder, Tantalum Oxide and Tantalum/Columbium Concentrates; and 1% from the quantity or weight listed in the solicitation for Tantalum Metal (Vacuum Grade) and Tantalum Metal (Capacitor Grade). The Contractor agrees to accept delivery of any quantity or weight within these limits. The contract price will be adjusted upward or downward in accordance with the unit price and on the basis of the quantity or weight actually delivered.

F.7 Environmental Protection (Includes Category 2 Tantalum Material) (MAY 03)

a. Transportation Requirements

(1) The transportation of hazardous material is governed by the Department of Transportation (DOT) Hazardous Materials Regulations (Title 49 Code of Federal Regulations, Parts 170 – 189). If the material being transported is covered by DOT Regulations, the Contractor or its agent is responsible for certifying to DOT that hazardous materials are properly classified, described, packaged, marked, and labeled and are in a condition safe to transport based on the Contractor's or its agent's own examination of the material. (See especially 49 CFR 173.7 (a)(1)). Domestic shipments of some items of Category 2 Tantalum/Columbium Concentrates require "strong, tight" packaging. The Government will provide this packaging. Palletized materials requiring "strong, tight" packaging will be placed in a sealed plastic bag. The plastic bag becomes the "strong, tight" packaging required by 49 CFR 173.427 (c)(1).

(2) The Government reserves the right to conduct reasonable inspection of the Contractor's or its agent's transportation conveyances or other equipment utilized to effect removal of the material purchased under this Agreement. Inspection may occur prior to, during, or subsequent to removal of the material from Government storage locations. The Contractor or its agent shall provide Government representatives with access and any reasonable assistance required to conduct this inspection.

b. Material Safety Data Sheets

(1) The Contractor shall comply with all applicable Occupational Safety and Health Administration (OSHA) and any other Federal, state or local laws, codes, ordinances, and regulations (including obtaining any required licenses or permits) governing exposure to, and storage, handling, transportation, and disposition of, this material.

(2) Material Safety Data Sheets as required by OSHA Hazard Communication Standard – 29 CFR 1910.1200 are incorporated herein (**See Section J.4**). This data provides specific toxicity and health

related data for the protection of human health and environment. Contractors should review this information carefully. It is the responsibility of the Contractor to further communicate this information to the distributor, manufacturer, user and/or transporter of this material as may be required by Federal regulations.

(3) Contractors shall also refer to 29 CFR 1910 Occupational Safety and Health Standards, specifically section 1910.1000 through 1050. These occupational standards set standards for permissible exposures, methods of compliance, personal protective equipment, and other measures that must be taken when working with, or in proximity to, hazardous materials, chemicals and substances in the United States and its territories and possessions.

c. Use and Disposition

(1) The Contractor certifies that it shall use and ultimately dispose of any hazardous material purchased under this Agreement in accordance with all applicable Federal, state, local and international laws and regulations in a manner safe for the public and the environment.

(2) The material offered under this Agreement is not, in its present form, subject to EPA Hazardous Waste Regulations (40 CFR Part 260 et seq.) issued under the Resource Conservation and Recovery Act. However, it is possible that use of this material will lead to the creation of hazardous waste. 40 CFR Part 260 et seq., details the responsibilities of generators, transporters, treaters, storers and disposers of hazardous waste. Failure to comply with these regulations can lead to civil and criminal penalties.

(3) The wood pallets or material used to package the commodity sold under this BOA may have been treated with a wood preservative to protect it from insect attack and decay. These preservatives penetrate and remain in the wood for a long time and may pose certain hazards if precautions are not taken during the handling, use, and disposal of these treated wood products. Treated wood products should not be burned in open fires. Contractors are encouraged to seek advice on proper disposal from the local environmental protection agency.

SECTION G – CONTRACT ADMINISTRATION DATA

G.1 Effective Period (JUN 99)

This Agreement shall be in effect until withdrawn by the Government or superceded by another Agreement.

G.2 Amendments and Modifications (JAN 95)

a. Changes in terms and conditions of this Agreement shall be accomplished by written amendment only.

b. Changes in terms and conditions of any resulting contract shall be accomplished only by written modification signed by the Contracting Officer.

G.3 Title (JUL 02)

Title to the material shall pass to the Contractor after payment is received or the material is shipped, whichever comes first.

G.4 Risk of Loss (JUL 02)

a. After the award of the contract and prior to receipt of payment for or shipment of the material, whichever occurs first, the Government shall be responsible for the care and protection of the material, and any loss, damage or destruction occurring during such time will be adjusted by the Government.

b. After receipt of payment but prior to either shipment or the end of the contract period, the Government shall be responsible only for the exercise or reasonable care for the protection of the material.

c. After shipment or the end of the contract period, whichever occurs first, all risk of loss, damage, or destruction from any cause whatsoever, shall be borne by the Contractor.

G.5 Limitation on Government's Liability (JAN 95)

a. Except as provided in **paragraph b**., in any case where liability of the Government to the Contractor has been established, the measure of the Government's liability shall not exceed refund of whatever portion of the purchase price the Contractor has paid.

b. Where specifically authorized in writing by the Contracting Officer, the Contractor may recover reasonable costs of packing, loading, and transportation incurred in connection with return of material to the Government.

G.6 Protests (NOV 02)

a. General. Companies may file a protest over sales under this Agreement with the:

1) General Accounting Office (GAO);

2) Director, Directorate of Stockpile Contracts, DNSC, for a decision at a level above the Contracting Officer; or,

3) Contracting Officer.

Unless otherwise specified, protests will be presumed to be protests to the Contracting Officer.

b. Pre-Award Protest

A protest by a company concerning the terms of this Agreement shall be filed before the company submits a completed Basic Ordering Agreement package as specified in Section B. Protests concerning the terms of any Request for Quotes hereunder shall be filed prior to the time set for receipt of quotes.

c. Post-Award Protests

Protests after award shall be filed not later than 10 calendar days after the basis of the protest is known or should have been known, whichever is earlier, except for challenging a sale under which a debriefing is requested and provided. In that situation, and where the basis was not known prior to the debriefing, the initial protest shall be filed not later than 10 calendar days after the date of the debriefing.

d. Service of Protest

(1) Protests to the General Accounting Office shall be filed in writing, in accordance with 4 CFR 21, at the following address:

General Counsel
Attn: Procurement Law Control Group
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

A copy of any protest to the GAO shall be served on the Contracting Officer at the address in (3) below, within one day of filing the protest. Firms seeking to file a protest with GAO are advised to consult the GAO regulations at 4 CFR 21 and the GAO publication, **Bid Protests at GAO: A Descriptive Guide**. Copies of these documents are available from the General Accounting Office.

(2) As an alternative to filing a protest with the Contracting Officer, quoters may seek an independent review by filing an agency-level protest with the DNSC Director, Directorate of Stockpile Contracts. This process allows for a higher level decision on the initial protest. It is not a review of a Contracting Officer's decision on a protest filed with the Contracting Officer. A protest seeking an agency-level

decision should clearly state that it is an “Agency Level Protest Under Executive Order 12979”. The protest shall be served in writing at the following address and may be filed by mail, hand delivery, commercial carrier, or fax:

Attn: DNSC-C, Director, Directorate of Stockpile Contracts
Defense National Stockpile Center
8725 John J. Kingman Road, Suite 3229
Fort Belvoir, VA 22060-6223
Facsimile No.: (703) 767-5411

(3) Protest seeking a decision by the Contracting Officer shall be served in writing at the following address and may be filed by mail, hand delivery, commercial carrier, or fax:

Attn: DNSC-C, Jennifer Iribarren
Defense National Stockpile Center
8725 John J. Kingman Road, Suite 3229
Fort Belvoir, VA 22060-6223
Facsimile No.: (703) 767-5484 or (703) 767-5494

G.7 Disputes (MAY 03)

a. This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

b. Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

c. "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding $100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

d. (1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision.

(2) (i) The Contractor shall provide the certification specified in paragraph (d)(2)(iii) of this clause when submitting any claim exceeding $100,000.

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately

reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor."

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

e. For Contractor claims of $100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over $100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

f. The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

g. If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the offer.

h. The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date payment otherwise would be due, if that date is later, until the date of payment. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

i. The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

G.8 Default (MAY 03)

a. (1) The Government may, by written notice of default to the Contractor, terminate this contract in whole or in part if the Contractor fails to –

(i) Make payment and remove the material within the time specified in this contract or any extension;

(ii) Remove the material within the time specified in this contract whether or not payment has been made;

(iii) Make progress, so as to endanger performance of this contract; or

(iv) Perform any of the other provisions of this contract.

(2) The Government's right to terminate this contract under a.(1)(iii) and a.(1)(iv) above, may be exercised if the Contractor does not cure such failure within 10 days (or more if authorized in writing by the Contracting Officer) after receipt of the notice from the Contracting Officer specifying the failure. Upon the Contractor's failure to cure such default within that period (or such further

period as the Contracting Officer may allow), the Contractor shall lose all right, title and interest which it might otherwise have acquired in and to the material as to which a default has occurred.

(3) If at any time prior to the expiration of this contract, the Contractor makes it clear either by words, actions or circumstances, that the Contractor is unwilling or unable to perform under this contract, the Government shall not be required to furnish the Contractor notice specifying the failure under this contract prior to exercising its right to terminate this contract for default and seek damages.

b. If the Government terminates the contract, the Contractor shall be held liable for damages as described below. However, in no event will damages exceed the original contract price.

c. If the Government terminates the contract for default, it may subsequently resell the material for the Contractor's account, under the terms and in the manner the Contracting Officer considers appropriate, and assess the Contractor the difference between the contract price and the price obtained on resale. In no event will the Contractor be refunded any money if the Government obtains a greater price on resale, nor will an accounting of money be made until resale is complete. In the event that the Government does not resell the material within 12 months, the Contractor may be held liable for the full contract price for the quantity of material on which the default has occurred.

d. If, after termination, it is determined that the Contractor was not in default, or that the default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Government.

e. The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

G.9 Termination for Convenience of the Government (DEC 97)

a. The Contracting Officer, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the Government shall only be liable for actual costs incurred by the Contractor before the effective date of termination.

b. If a bona fide requirement for the material develops or exists prior to removal of the material from Government control, the Government may withdraw that material from the sale. In the event of a withdrawal under this condition, the Government shall be liable only for the refund of the contract price of the withdrawn material or such portion of the contract price as it may have received plus simple interest at the rate established by the Secretary of the Treasury.

G.10 Excusable Delays (MAY 95)

a. In the event either party should be prevented from performing under this contract by reason of any unforeseeable cause beyond its control and without

its fault or negligence, including, but not restricted to, acts of God or of the public enemy, sovereign acts of the United States, acts of a foreign Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and unusually severe weather, performance under the contract shall be suspended in whole or in part until the cause ceases to exist and thereafter the time for fulfillment of the contract shall be extended by the length of time during which the cause prevented performance under the contract.

b. This section shall also apply to an excusable delay condition that prevents delivery at a consignee's plant if –

(1) the delay meets the criteria in paragraph a. above; and

(2) the identity of the consignee is known to the Government prior to commencement of the excusable delay condition.

c. The Contractor shall notify the Contracting Officer, in writing, of the nature and extent of the excusable delay condition promptly after the commencement thereof, but in any event prior to outloading of the material from the storage location from which it is to be shipped. The Contractor shall notify the Contracting Officer, in writing, within ten (10) calendar days when the excusable delay condition ceases to exist.

G.11 Setoff of Funds (JUL 98)

The Contractor agrees that the Government may use all or a portion of any monies received by Government to satisfy, in whole or in part, any debt (e.g. delinquent payments, interest or storage charges), arising out of this or any other transaction.

G.12 Indemnification Agreement (JAN 02)

The Contractor shall save and hold harmless and indemnify the Government against any and all liabilities, claims, and costs of any kind and nature for injury to or death of any person or persons and for loss or damage to any property (Government or otherwise) occurring in connection with or in any way incident to or arising out of the occupancy, use, service, operations, or performance of work resulting from the acts or omissions of the Contractor, the Contractor's employees, or any person subject to the Contractor's control in connection with this contract. Whether due to negligence or not of the Contractor, the Contractor agrees to reimburse the United States for any legal expenses (including salaries of attorneys) incurred by the United States in defending any and all claims or suits against the United States, whether well founded or not, in any way whatsoever alleged to have arisen from the acts or omissions of the Contractor, the Contractor's employees, or any person subject to the Contractor's control.

G.13 Covenant Against Contingent Fees (JAN 95)

a. The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding

for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to add to the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

b. “Bona fide agency,” as used in this paragraph, means an established commercial or selling agency, maintained by a Contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

c. “Bona fide employee,” as used in this paragraph, means a person, employed by a Contractor and subject to the Contractor’s supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

d. “Contingent fee,” as used in this paragraph, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

e. “Improper influence,” as used in this paragraph, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

SECTION H – DEFINITIONS (APR 02)

As used throughout this Agreement, the following terms shall have the meaning set forth below:

a. The term “Contracting Officer” means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings.

b. The terms “Quoter”, “Purchaser”, or “Contractor” may be used interchangeably.

c. The term "Agreement" means the BOA, Acceptance Letter, Quote/Award Form and executed Agreement.

d. The terms ”shall” and “must” are used interchangeably.

SECTION I – SUBMITTALS

The following clauses are self-certified by the quoter on I.1 Quote/Award Form at the time of quote submission:

I.3 Certificate of Independent Price Determination (JAN 02)

I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, Environmental Compliance, and Other Responsibility Matters (JUL 97)

COMPLETE AND RETURN THE FOLLOWING:

Basic Ordering Agreement Page with NRC License if you are prequalifying to submit quotes on Category 2 Tantalum/Columbium Concentrates

I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, Environmental Compliance, and Other Responsibility Matters (JUL 97)--Initial submission

I.5 Type of Business Organization (APR 96)

I.6 Persons Authorized to Request Shipment of Material (FEB 98)

I.7 Contractor's Billing Address (JUL 96)

I.1 Quote/Award Form (FEB 03)

QUOTE/AWARD FORM UNDER DLA-TANTALUM-001	CONTRACT NUMBER	PAGE 1 of

FROM:	TO: DEFENSE NATIONAL STOCKPILE CENTER ATTN: TANTALUM TEAM, DNSC-C1 8725 JOHN J. KINGMAN ROAD, SUITE 3229 FORT BELVOIR, VA 22060 FAX: (703) 767-5494

DATE OF QUOTE:	PLEASE FAX QUOTE TO THE FOLLOWING NUMBER: (703) 767-5541	INVOICE/PAYMENTS TO: ATTN: DNSC-R, ACCOUNTS RECEIVABLE DEFENSE NATIONAL STOCKPILE CENTER 8725 JOHN J. KINGMAN, SUITE 3229 FORT BELVOIR, VA 22060

This contract is entered into by and between the United States of America, hereinafter called the "Government ," represented by the Contracting Officer executing this contract and the Contractor identified below. The Government agrees to sell and the Contractor agrees to buy the material described below in accordance with the terms and conditions of the Basic Ordering Agreement (BOA), DLA-TANTALUM-001. In the event of a conflict between the terms of the BOA, the Acceptance Letter and the Quote/Award Form, the terms of the Quote/Award Form shall govern.

ITEM	*PROPERTY DESCRIPTION AND LOCATION*	*QUANTITY (No. of Units)*	*UNIT*	*UNIT PRICE*	*TOTAL*
	CONTRACTOR QUOTE:				
	Quote was prepared in accordance with I.3 and I.4 of the solicitation _____ (Offeror's initials required)				
	AWARD BY THE GOVERNMENT **CONTRACT PERIOD EXPIRES ON:**				

EXECUTION BY CONTRACTOR	**ACCEPTANCE BY GOVERNMENT**	
DATE (Day, Month, Year)	*UNITED STATES OF AMERICA BY:*	*DATE:*
NAME/SIGNATURE OF CONTRACTOR		
SIGNATURE AND TITLE OF PERSON AUTHORIZED TO SIGN THIS QUOTE (Type or print name and title under signature) **Telephone Number:** _____ **Facsimile Number:** _____	*NAME AND TITLE OF CONTRACTING OFFICIAL* **Name:** _____ **Title:** _____	

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I.2 Shopping List (FEB 03)

A. Tantalum Carbide

ITEM NO.	STORAGE LOCATION	LOT	# OF BXES	PRODUCER	QUANTITY Tantalum Carbide Bulk Wt.(Lbs.)	OFFER QUANTITY LB Ta
18	Warren, OH	9	3	Kennametal	900.00	843.30
19	Warren, OH	10	3	Kennametal	900.00	843.39
20	New Haven, IN	2	3	Kennametal	900.00	844.56
21	New Haven, IN	2	4	Wah Chang	1,350.00	1,270.35
22	Somerville, NJ	8	3	Wah Chang	900.00	848.00
23	Somerville, NJ	10	3	Wah Chang	900.00	848.00
24	Somerville, NJ	11	3	Wah Chang	900.00	848.00
25	Somerville, NJ	12	3	Wah Chang	900.00	848.00
26	Somerville, NJ	8	3	Kennametal	900.00	842.00
27	Somerville, NJ	11	3	Kennametal	900.00	842.00
28	Somerville, NJ	12	3	Kennametal	900.00	843.00
29	Somerville, NJ	15	3	Kennametal	900.00	843.00
30	Somerville, NJ	16	3	Kennametal	900.00	841.00
31	Somerville, NJ	17	3	Kennametal	800.00	749.00
	TOTAL		43		12,950.00	12,153.60

Minimum offer quantity - one line item

Offer Price must be in pounds (LB) contained Tantalum (Ta)

I.2 Shopping List (FEB 03)

B. Tantalum Metal, Vacuum Grade

ITEM NO.	STORAGE LOCATION	LOT/INGOT NUMBER	NO. OF Ingot pcs/ cradle	PRODUCER	QUANTITY TANTALUM (Ta) Net Wt. (lbs.)	OFFER QUANTITY POUNDS CONTAINED Ta
2	Binghamton, NY	ETA 911 R1	2	H.C.STARK DOMESTIC	2,279.00	2,277.63
3	Binghamton, NY	ETA 912 R1	2	H.C.STARK DOMESTIC	2,307.20	2,305.12
4	Binghamton, NY	ETA 913 R1	2	H.C.STARK DOMESTIC	2,237.60	2,236.03
5	Binghamton, NY	ETA 914R1	2	H.C.STARK DOMESTIC	2,339.40	2,338.23
6	Binghamton, NY	ETA 915 R1	2	H.C.STARK DOMESTIC	2,224.40	2,222.62
9	Binghamton, NY	ETA 918 R1	2	H.C.STARK DOMESTIC	2,256.60	2,255.25
10	Binghamton, NY	ETA 921 R1	2	H.C.STARK DOMESTIC	2,305.00	2,303.85
12	Binghamton, NY	ETA 923 R1	2	H.C.STARK DOMESTIC	2,213.60	2,211.61
13	Binghamton, NY	ETA 924 R1	2	H.C.STARK DOMESTIC	2,310.40	2,308.78
15	Binghamton, NY	ETA 926 R1	2	H.C.STARK DOMESTIC	2,279.40	2,277.58
17	Binghamton, NY	ETA 959 R1	2	H.C.STARK DOMESTIC	2,226.80	2,225.69
19	Binghamton, NY	ETA 963 R1	2	H.C.STARK DOMESTIC	2,227.40	2,226.29
20	Binghamton, NY	ETA 964R1	2	H.C.STARK DOMESTIC	2,284.80	2,283.66
21	Binghamton, NY	ETA 965 R1	2	H.C.STARK DOMESTIC	2,288.00	2,286.86
22	Binghamton, NY	ETA 966 R1	2	H.C.STARK DOMESTIC	2,252.60	2,251.70
23	Binghamton, NY	ETA 967 R1	2	H.C.STARK DOMESTIC	2,266.60	2,265.47
24	Binghamton, NY	ETA 968 R1	2	H.C.STARK DOMESTIC	2,292.60	2,291.22
25	Binghamton, NY	ETA 969 R1	2	H.C.STARK DOMESTIC	2,249.00	2,247.65

ITEM NO.	STORAGE LOCATION	LOT/INGOT NUMBER	NO. OF Ingot pcs/ cradle	PRODUCER	QUANTITY TANTALUM (Ta) Net Wt. (lbs.)	OFFER QUANTITY POUNDS CONTAINED Ta
26	Binghamton, NY	ETA 971 R1	2	H.C.STARK DOMESTIC	2,379.80	2,378.37
27	Binghamton, NY	ETA 972 R1	2	H.C.STARK DOMESTIC	2,312.60	2,311.68
28	Binghamton, NY	ETA 973 R1	2	H.C.STARK DOMESTIC	2,272.40	2,271.49
32	Binghamton, NY	ETA 977 R1	2	H.C.STARK DOMESTIC	2,285.60	2,284.46
34	Binghamton, NY	ETA 979 R1	2	H.C.STARK DOMESTIC	2,331.80	2,330.87
39	Binghamton, NY	ETA 1024 R1	2	H.C.STARK DOMESTIC	2,213.60	2,212.27
40	Binghamton, NY	ETA 1025 R1	2	H.C.STARK DOMESTIC	2,312.60	2,310.98
41	Binghamton, NY	ETA 1026 R1	2	H.C.STARK DOMESTIC	2,273.20	2,271.38
42	Binghamton, NY	ETA 1028 R1	2	H.C.STARK DOMESTIC	2,172.80	2,172.15
43	Binghamton, NY	ETA 1029 R1	2	H.C.STARK DOMESTIC	2,244.00	2,241.98
44	Binghamton, NY	ETA 1030 R1	2	H.C.STARK DOMESTIC	2,257.80	2,256.90
45	Binghamton, NY	ETA 1031 R1	2	H.C.STARK DOMESTIC	2,291.20	2,290.28
49	Binghamton, NY	TA 80508-3	2	CABOT CORP. DOMESTIC	3,454.00	3,453.31
52	Binghamton, NY	TA 80576-2	2	CABOT CORP. DOMESTIC	3,398.00	3,397.32
54	Binghamton, NY	TA 80598-2	2	CABOT CORP. DOMESTIC	3,171.00	3,169.73

I.2 Shopping List (FEB 03)

B. Tantalum Metal, Vacuum Grade

ITEM NO.	STORAGE LOCATION	LOT/INGOT NUMBER	NO. OF Ingot pcs/ cradle	PRODUCER	QUANTITY TANTALUM (Ta) Net Wt. (lbs.)	OFFER QUANTITY POUNDS (LB) CONTAINED Ta
71	Binghamton, NY	TA 80668-2	2	CABOT CORP. DOMESTIC	3,236.00	3,235.35
73	Binghamton, NY	TA 80671-2	2	CABOT CORP. DOMESTIC	3,215.00	3,214.36
76	Binghamton, NY	TA 80687-2	2	CABOT CORP. DOMESTIC	3,208.00	3,207.60
78	Binghamton, NY	TA 80690-2	2	CABOT CORP. DOMESTIC	3,141.00	3,140.06
81	Binghamton, NY	TA 80705-2	2	CABOT CORP. DOMESTIC	3,203.00	3,202.04
86	Binghamton, NY	TA 80714-2	2	CABOT CORP. DOMESTIC	3,176.00	3,175.36
87	Binghamton, NY	TA 80715-2	2	CABOT CORP. DOMESTIC	3,286.00	3,285.34
		TOTAL			**22,465.00**	**22,460.11**

Minimum Quantity - One line item

Offer price must be in pounds (LB) contained Tantalum (Ta)

ITEM NO.	STORAGE LOCATION	Form/ Grade	LOT NUMBER	No. of Boxes	QUANTITY TANTALUM (Ta) Net Wt.	OFFER QUANTITY POUNDS (LB) CONTAINED Ta
		Grade 1A				
528	Somerville	Powder/High Cap. NVR Gr. 1A	248	6	720.00	719.00
529	Somerville	Powder/High Cap. NVR Gr. 1A	249	6	700.00	699.00
530	Somerville	Powder/High Cap. NVR Gr. 1A	250	6	700.00	699.00
531	Somerville	Powder/High Cap. NVR Gr. 1A	252	6	690.00	689.00
532	Somerville	Powder/High Cap. NVR Gr. 1A	254	4	404.50	404.00
		Grade 2				
533	Somerville	Powder/Low Cap. Grade 2	010	4	480.00	479.00
534	Somerville	Powder/Low Cap. Grade 2	011	4	480.00	479.00
535	Somerville	Powder/Low Cap. Grade 2	012	4	480.00	479.00
536	Somerville	Powder/Low Cap. Grade 2	019	4	480.00	479.00
537	Somerville	Powder/Low Cap. Grade 2	020	4	480.00	479.00
538	Somerville	Powder/Low Cap. Grade 2	021	4	480.00	479.00
539	Somerville	Powder/Low Cap. Grade 2	022	4	480.00	479.00
540	Somerville	Powder/Low Cap. Grade 2	023	4	480.00	479.00

ITEM NO.	STORAGE LOCATION	Form/ Grade	LOT NUMBER	No. of Boxes	QUANTITY TANTALUM (Ta) Net Wt.	OFFER QUANTITY POUNDS (LB) CONTAINED Ta
		Grade 2				
541	Somerville, NJ	Powder/Low Cap. Grade 2	024	4	480.00	479.00
542	Somerville, NJ	Powder/Low Cap. Grade 2	025	4	480.00	479.00
543	Somerville, NJ	Powder/Low Cap. Grade 2	026	4	480.00	479.00
544	Somerville, NJ	Powder/Low Cap. Grade 2	028	4	480.00	479.00
		Grade 3				
545	Somerville, NJ	Powder/High Cap. HVR Grade 3	053	5	490.00	489.00
546	Somerville, NJ	Powder/High Cap. HVR Grade 3	054	5	570.00	569.00
547	Somerville, NJ	Powder/High Cap. HVR Grade 3	055	5	510.00	507.00
548	Somerville, NJ	Powder/High Cap. HVR Grade 3	056	5	490.00	489.00
549	Somerville, NJ	Powder/High Cap. HVR Grade 3	058	7	750.00	749.00
550	Somerville, NJ	Powder/High Cap. HVR Grade 3	059	5	510.00	509.00
551	Somerville, NJ	Powder/High Cap. HVR Grade 3	063	5	560.00	559.00
552	Somerville, NJ	Powder/High Cap. HVR Grade 3	064	6	700.00	699.00
553	Somerville, NJ	Powder/High Cap. HVR Grade 3	065	4	430.00	429.00
554	Somerville, NJ	Powder/High Cap. HVR Grade 3	066	7	750.00	749.00
555	Somerville, NJ	Powder/High Cap. HVR Grade 3	067	4	480.00	479.00

ITEM NO.	STORAGE LOCATION	Form/ Grade	LOT NUMBER	No. of Boxes	QUANTITY TANTALUM (Ta) Net Wt.	OFFER QUANTITY POUNDS (LB) CONTAINED Ta
		Grade 3				
556	Somerville, NJ	Powder/High Cap. HVR Grade 3	068	5	570.00	569.00
557	Somerville, NJ	Powder/High Cap. HVR Grade 3	097	7	740.00	739.00
558	Somerville, NJ	Powder/High Cap. HVR Grade 3	099	5	510.00	509.00
559	Somerville, NJ	Powder/High Cap. HVR Grade 3	100	4	480.00	479.00
560	Somerville, NJ	Powder/High Cap. HVR Grade 3	101	7	750.00	749.00
561	Somerville, NJ	Powder/High Cap. HVR Grade 3	106	6	720.00	719.00
		Grade 4				
562	Somerville, NJ	Powder/Very High Cap. Grade 4	406	5	520.00	519.00
563	Somerville, NJ	Powder/Very High Cap. Grade 4	408	7	740.00	739.00
564	Somerville, NJ	Powder/Very High Cap. Grade 4	409	5	560.00	559.00
565	Somerville, NJ	Powder/Very High Cap. Grade 4	410	6	620.00	619.00
		Grade 5				
566	Somerville, NJ	Powder/Extra High Cap. Grade 5	501	7	740.00	739.00
567	Somerville, NJ	Powder/Extra High Cap. Grade 5	504	5	540.00	539.00
568	Somerville, NJ	Powder/Extra High Cap. Grade 5	505	5	580.00	579.00

ITEM NO.	STORAGE LOCATION	Form/ Grade	LOT NUMBER	No. of Boxes	QUANTITY TANTALUM (Ta) Net Wt.	OFFER QUANTITY POUNDS (LB) CONTAINED Ta
		Grade 5				
569	Somerville, NJ	Powder/Extra High Cap. Grade 5	508	6	650.00	649.00
570	Somerville, NJ	Powder/Extra High Cap. Grade 5	521	4	470.00	469.00
		Grade 6				
571	Somerville, NJ	Ingots Grade 6	012	2	970.00	969.00
572	Somerville, NJ	Ingots Grade 6	016	3	1,354.00	1,353.00
573	Somerville, NJ	Ingots Grade 6	017	4	1,470.00	1,469.00
574	Somerville, NJ	Ingots Grade 6	018	3	1,272.00	1,271.00
575	Somerville, NJ	Ingots Grade 6	021	2	781.00	780.00
		Grade 7				
576	Somerville, NJ	Slabs Grade 7 Size 2x7x22 1/2	007	3	1,172.00	1,171.00
577	Somerville, NJ	Slabs Grade 7 Size 2x7x22 1/2	011	3	1,068.00	1,067.00
578	Somerville, NJ	Slabs Grade 7 Size 2x7x22 1/2	014	5	1,332.00	1,331.00
579	Somerville, NJ	Slabs Grade 7 Size 2x7x22 1/2	012	3	1,068.00	1,067.00
580	Somerville, NJ	Slabs Grade 7 Size 2x7x22 1/2	013	3	1,049.00	1,048.00

ITEM NO.	STORAGE LOCATION	Form/ Grade	LOT NUMBER	No. of Boxes	QUANTITY TANTALUM (Ta) Net Wt.	OFFER QUANTITY POUNDS (LB) CONTAINED Ta
		Samples				
581	Somerville, NJ	Sintered Tantalum Pellets	000	1	134.00	134.00
		Grade 6				
582	Baton Rouge	Ingots Grade 6	019	3	1,240.00	1,239.00
583	Baton Rouge	Ingots Grade 6	020	3	1,197.00	1,196.00
		Grade 7				
584	Baton Rouge	Slabs Grade 7 Size 2x7x22 1/2	009	3	1,240.75	1,240.00
585	Baton Rouge	Slabs Grade 7 Size 2x7x22 1/2	016	4	927.25	926.00
	TOTAL				4,739.00	4,735.00

Minimum offer quantity - one line item
Offer Price must be in pounds (LB) contained Tantalum (Ta)

D. Tantalum Oxide

ITEM NO.	STORAGE LOCATION	LOT NO.	NO. DRUMS	OFFER QUANTITY BULK WT. (LBS.)
1	New Haven, IN	1	82	25,010.00
2	New Haven, IN	2	82	25,010.00
3	New Haven, IN	3	82	25,010.00
4	New Haven, IN	1(DLA300-91-C-0017)	82	25,010.00
5	New Haven, IN	2(DLA300-91-C-0017)	82	25,010.00
6	New Haven, IN	3(DLA300-91-C-0017)	82	25,010.00
7	New Haven, IN	4(DLA300-91-C-0017)	82	25,010.00
8	New Haven, IN	S-1048	100	9,196.00
9	New Haven, IN	S-1048-New York	50	4,980.00
10	New Haven, IN	S-1138G	50	5,031.50
11	New Haven, IN	S-1138F	60	6,020.00
12	New Haven, IN	S-992-2	50	5,007.00
13	New Haven, IN	S-992-3	50	5,004.00
14	New Haven, IN	P-902-1	50	5,012.00
15	New Haven, IN	P-902-2	50	5,014.00
16	New Haven, IN	S-1138-1	50	5,020.00
17	New Haven, IN	S-1138-2	50	5,004.00
18	New Haven, IN	S-1138-3	50	5,020.00
19	New Haven, IN	S-1138-4	100	10,005.00
20	New Haven, IN	S-1138-5	100	10,017.00
21	New Haven, IN	M-New York-120	20	2,000.00
22	New Haven, IN	MGK-199	5	13,352.00
	Total		1,409	270,752.50

Minimum Offer Quantity - one line item

Offer price must be in pounds (LB)

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
37	BINGHAMTON	BELGIAN CONGO	DMS-99	50	19,823.00	6,664.50
38	BINGHAMTON	PORTUGAL	014	25	10,989.00	3,345.10
39	BINGHAMTON	PORTUGAL	015	17	5,521.00	1,641.90
40	BINGHAMTON	BELGIAN CONGO	004	69	21,967.00	6,787.80
41	BINGHAMTON	BELGIAN CONGO	05C	46	15,022.00	5,792.50
42	BINGHAMTON	BELGIAN CONGO	079	21	5,943.00	2,222.70
43	BINGHAMTON	BELGIAN CONGO	85	29	7,729.00	2,748.40
44	BINGHAMTON	BELGIAN CONGO	09M	67	21,809.00	7,231.90
45	BINGHAMTON	BELGIAN CONGO	10M	20	6,648.00	1,735.10
46	BINGHAMTON	BELGIAN CONGO	11M	67	21,827.00	7,659.10
47	BINGHAMTON	BELGIAN CONGO	12M	100	32,958.00	11,502.30
48	BINGHAMTON	BELGIAN CONGO	13M	50	17,592.00	5,351.50
49	BINGHAMTON	BELGIAN CONGO	14M	67	21,982.00	6,922.10
50	BINGHAMTON	BELGIAN CONGO	15A	16	4,383.00	1,191.30
51	BINGHAMTON	BELGIAN CONGO	15B	29	8,179.00	2,672.10
52	BINGHAMTON	BELGIAN CONGO	15M	27	8,988.00	3,314.80
53	BINGHAMTON	BELGIAN CONGO	21H	11	3,025.00	1,032.70
54	BINGHAMTON	BELGIAN CONGO	22M	67	22,081.00	7,255.80
55	BINGHAMTON	BELGIAN CONGO	23M	09	2,830.00	1,137.70
56	BINGHAMTON	BELGIAN CONGO	24M	67	22,173.00	7,926.80
57	BINGHAMTON	BELGIAN CONGO	25M	25	8,317.00	2,524.20
58	BINGHAMTON	BELGIAN CONGO	62M	28	22,475.00	6,187.40
				SUBTOTAL	312,261.00	102,847.70

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
59	BINGHAMTON	BELGIAN CONGO	65M	28	22,323.00	7,473.70
60	BINGHAMTON	BELGIAN CONGO	66H	29	7,988.00	2,327.70
61	BINGHAMTON	BELGIAN CONGO	67H	49	13,499.00	5,021.60
62	BINGHAMTON	BELGIAN CONGO	67M	17	13,627.00	4,420.60
63	BINGHAMTON	BELGIAN CONGO	70H	17	14,327.00	4,159.10
64	BINGHAMTON	BELGIAN CONGO	70M	28	21,966.00	6,763.30
65	BINGHAMTON	BELGIAN CONGO	73H	11	9,187.00	3,342.20
66	BINGHAMTON	BELGIAN CONGO	74H	11	9,112.00	2,535.00
67	BINGHAMTON	BELGIAN CONGO	74M	42	22,164.00	7,194.40
68	BINGHAMTON	BELGIAN CONGO	75M	67	22,149.00	7,247.20
69	BINGHAMTON	BELGIAN CONGO	76M	08	2,656.00	881.30
70	BINGHAMTON	BELGIAN CONGO	78M	46	12,525.00	4,496.50
71	BINGHAMTON	BELGIAN CONGO	79M	65	21,444.00	6,280.90
72	BINGHAMTON	BELGIAN CONGO	80M	57	18,863.00	6,643.50
73	BINGHAMTON	BELGIAN CONGO	81M	17	5,619.00	1,945.30
74	BINGHAMTON	BELGIAN CONGO	82H	36	10,098.00	2,688.10
75	BINGHAMTON	BELGIAN CONGO	82M	79	23,507.00	7,665.60
76	BINGHAMTON	BELGIAN CONGO	83H	19	5,434.00	1,530.80
77	BINGHAMTON	BELGIAN CONGO	87H	21	5,966.00	1,566.70
78	BINGHAMTON	BELGIAN CONGO	87M	40	13,218.00	4,688.40
79	BINGHAMTON	BELGIAN CONGO	89A	08	2,132.00	681.80
80	BINGHAMTON	BELGIAN CONGO	90H	50	14,100.00	4,486.60
				SUBTOTAL	291,904.00	94,040.30

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
81	BINGHAMTON	BELGIAN CONGO	90M	37	11,163.00	3,641.40
82	BINGHAMTON	BELGIAN CONGO	91A	45	12,598.00	3,429.20
83	BINGHAMTON	BELGIAN CONGO	93M	24	7,907.00	2,857.60
84	BINGHAMTON	BELGIAN CONGO	18MA	19	6,382.00	2,388.10
85	BINGHAMTON	BELGIAN CONGO	19AM	07	2,299.00	725.10
86	BINGHAMTON	BELGIAN CONGO	20DM	07	2,166.00	729.30
87	BINGHAMTON	BELGIAN CONGO	72HA	03	2,520.00	809.90
88	BINGHAMTON	BELGIAN CONGO	85BH	15	4,175.00	1,114.70
89	BINGHAMTON	BELGIAN CONGO	85DH	31	8,648.00	2,964.50
90	BINGHAMTON	BELGIAN CONGO	236	24	8,382.00	2,570.80
91	BINGHAMTON	UNKNOWN	6178	48	15,396.00	3,832.10
92	BINGHAMTON	BELGIAN CONGO	G&H	08	2,473.00	763.70
93	BINGHAMTON	BELGIAN CONGO	080	13	4,373.00	1,144.90
94	BINGHAMTON	BELGIAN CONGO	DMS76A	78	31,153.00	11,162.10
95	BINGHAMTON	BELGIAN CONGO	DMS76B	42	16,541.00	6,341.80
96	BINGHAMTON	BELGIAN CONGO	DMS-089	39	15,678.00	5,783.60
97	BINGHAMTON	BELGIAN CONGO	001	02	2,892.00	909.00
98	BINGHAMTON	UNKNOWN	DMS-108	27	10,556.00	3,864.60
99	BINGHAMTON	BELGIAN CONGO	05B	42	13,692.00	5,315.20
100	BINGHAMTON	BELGIAN CONGO	16H	08	2,859.00	1,458.40
101	BINGHAMTON	BELGIAN CONGO	16M	13	4,231.00	1,628.90
102	BINGHAMTON	BELGIAN CONGO	18H	26	8,894.00	4,020.10
				SUBTOTAL	194,978.00	67,455.00

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	**Tantalum Minerals More Than 0.05% Combined Thorium and Uranium**				
103	BINGHAMTON	BELGIAN CONGO	69H	16	5,694.00	2,602.20
104	BINGHAMTON	BELGIAN CONGO	78H	21	7,252.00	3,555.70
105	BINGHAMTON	BELGIAN CONGO	20AM	16	5,412.00	1,638.20
106	BINGHAMTON	BELGIAN CONGO	20BM	27	8,992.00	3,679.50
107	BINGHAMTON	BELGIAN CONGO	92AH	22	7,390.00	3,782.20
108	BINGHAMTON	BELGIAN CONGO	92BH	07	2,999.00	1,477.30
109	BINGHAMTON	UNKNOWN	237	21	7,114.00	2,816.40
110	BINGHAMTON	BELGIAN CONGO	074	05	2,182.00	928.20
111	BINGHAMTON	BELGIAN CONGO	106	12	3,909.00	1,796.20
112	BINGHAMTON	BELGIAN CONGO	115	14	4,962.00	2,397.60
113	BINGHAMTON	BELGIAN CONGO	125	13	5,435.00	2,843.60
114	BINGHAMTON	BELGIAN CONGO	173	16	5,366.00	3,087.10
115	BINGHAMTON	BELGIAN CONGO	209	15	6,565.00	3,244.40
116	BINGHAMTON	BELGIAN CONGO	225	09	2,481.00	1,065.10
117	BINGHAMTON	BELGIAN CONGO	235	07	2,378.00	1,382.10
118	BINGHAMTON	BELGIAN CONGO	075	07	2,181.00	730.20
119	BINGHAMTON	BELGIAN CONGO	073	10	4,369.00	1,825.40
120	BINGHAMTON	SOUTH AFRICA	1--63	21	7,053.00	1,519.90
121	BINGHAMTON	BELGIAN CONGO	93HOB	14	4,867.00	1,706.90
122	BINGHAMTON	BELGIAN CONGO	DMS-102	143	56,897.00	20,346.40
123	BINGHAMTON	CHINA	2322	10	2,790.00	315.30
				SUBTOTAL	156,288.00	62,739.90

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	**Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium**				
124	BINGHAMTON	BELGIAN CONGO	92C	08	2,749.00	905.00
125	BINGHAMTON	BELGIAN CONGO	115B	06	2,374.00	895.50
126	BINGHAMTON	BELGIAN CONGO	81HOB	05	1,692.00	1,084.20
127	BINGHAMTON	BELGIAN CONGO	88HOB	31	10,785.00	4,784.20
128	BINGHAMTON	BELGIAN CONGO	19H	08	2,844.00	1,849.70
129	BINGHAMTON	BELGIAN CONGO	20H	13	4,603.00	3,128.20
130	BINGHAMTON	BELGIAN CONGO	65H	10	3,233.00	1,552.50
131	BINGHAMTON	BELGIAN CONGO	68H	08	2,666.00	1,703.00
132	BINGHAMTON	BELGIAN CONGO	71H	05	1,615.00	1,079.60
133	BINGHAMTON	BELGIAN CONGO	77H	05	1,796.00	1,203.70
134	BINGHAMTON	BELGIAN CONGO	94H	04	1,422.00	924.00
135	BINGHAMTON	BELGIAN CONGO	95H	06	2,166.00	970.60
136	BINGHAMTON	BELGIAN CONGO	72HB	07	2,341.00	1,219.20
137	BINGHAMTON	BELGIAN CONGO	104	13	4,377.00	1,989.80
138	BINGHAMTON	BELGIAN CONGO	110	08	2,216.00	1,073.00
139	BINGHAMTON	BELGIAN CONGO	111	21	7,370.00	4,057.20
140	BINGHAMTON	BELGIAN CONGO	127	09	2,840.00	1,387.10
141	BINGHAMTON	BELGIAN CONGO	177	21	7,281.00	3,467.20
142	BINGHAMTON	BELGIAN CONGO	190	13	4,073.00	1,792.90
143	BINGHAMTON	BELGIAN CONGO	222	02	2,162.00	1,180.90
144	BINGHAMTON	UNKNOWN	27001	128	89,600.00	24,846.10
				SUBTOTAL	160,205.00	61,093.60

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium				
145	BINGHAMTON	UNKNOWN	27002	128	89,600.00	26,656.00
146	BINGHAMTON	UNKNOWN	27003	128	89,600.00	26,091.50
147	BINGHAMTON	UNKNOWN	27004	128	89,600.00	26,521.60
148	BINGHAMTON	UNKNOWN	27005	128	89,600.00	27,059.20
149	BINGHAMTON	UNKNOWN	27006	128	89,600.00	29,084.20
150	BINGHAMTON	UNKNOWN	27015	128	89,600.00	26,638.10
151	BINGHAMTON	UNKNOWN	27017	128	89,600.00	26,754.60
152	BINGHAMTON	UNKNOWN	27019	128	89,600.00	27,722.20
153	BINGHAMTON	UNKNOWN	27021	136	95,200.00	28,864.60
154	BINGHAMTON	UNKNOWN	27022	136	95,200.00	28,940.80
				SUBTOTAL	907,200.00	274,332.80
				TOTAL	2,022,836.00	662,509.30

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (Ta) Pentoxide (LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
155	NEW HAVEN	UNKNOWN	1 DLA300-90-C-0031	84	42,000.00	14,918.40
156	NEW HAVEN	UNKNOWN	2 DLA300-90-C-0031	84	42,000.00	14,939.40
157	NEW HAVEN	UNKNOWN	3 DLA300-90-C-0031	84	42,000.00	18,778.20
158	NEW HAVEN	UNKNOWN	4 DLA300-90-C-0031	82	42,000.00	13,225.80
159	NEW HAVEN	UNKNOWN	5 DLA300-90-C-0031	84	42,000.00	12,818.40
160	NEW HAVEN	UNKNOWN	6 DLA300-90-C-0031	84	42,000.00	13,326.60
161	NEW HAVEN	UNKNOWN	7 DLA300-90-C-0031	59	29,500.00	9,271.90
162	NEW HAVEN	UNKNOWN	DMS-137	50	13,730.00	6,661.80
163	NEW HAVEN	BRAZIL	108	24	6,400.00	2,753.90
164	NEW HAVEN	BELGIAN CONGO	199-B	29	7,917.00	3,499.30
165	NEW HAVEN	BELGIAN CONGO	A-DMS-123	31	8,553.00	4,131.10
166	NEW HAVEN	UNKNOWN	1053A	8	2,184.00	1,054.90
167	NEW HAVEN	UNKNOWN	1053B	8	2,128.00	1,308.10
168	NEW HAVEN	UNKNOWN	ONSP-4E179	7	2,847.00	1,136.50
169	NEW HAVEN	UNKNOWN	ONSP-4E178	23	9,223.00	3,276.00
170	NEW HAVEN	UNKNOWN	ONSP-4E182	46	19,321.00	7,127.50
171	NEW HAVEN	UNKNOWN	ONSP-30811	275	54,866.00	15,000.40
172	NEW HAVEN	UNKNOWN	MGK-110	8	3,273.00	1,376.00
173	NEW HAVEN	BRAZIL	MRC-281	28	5,676.00	2,005.30
174	NEW HAVEN	UNKNOWN	83/113	38	21,282.00	12,799.00
175	NEW HAVEN	BRAZIL	MRC-264	9	4,435.00	2,454.30
176	NEW HAVEN	LIQUIDO BRAZIL	23	5	2,182.00	1,386.40
				SUBTOTAL	445,517.00	163,249.20

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
177	NEW HAVEN	BRAZIL	024	05	2,200.00	1,457.50
178	NEW HAVEN	BELGIAN CONGO	MRC-229	11	2,218.00	927.60
179	NEW HAVEN	RHODESIA	MRC-301	01	265.00	130.10
180	NEW HAVEN	AUSTRALIA	MRC-299	01	277.00	214.10
181	NEW HAVEN	AUSTRALIA	MRC-313	01	235.00	154.30
182	NEW HAVEN	NIGERIA	MRC-272	07	1,320.00	771.10
183	NEW HAVEN	UNKNOWN	001107000G	13	8,674.00	5,305.90
184	NEW HAVEN	UNKNOWN	001107000F	06	3,781.00	2,151.00
185	NEW HAVEN	UNKNOWN	001060001	10	6,640.00	3,665.30
186	NEW HAVEN	UNKNOWN	0782362678	04	1,693.00	772.30
187	NEW HAVEN	UNKNOWN	0782362574	05	2,322.00	986.20
188	NEW HAVEN	UNKNOWN	0010700E	05	3,454.00	2,258.20
189	NEW HAVEN	UNKNOWN	001060002	13	8,765.00	4,620.00
190	NEW HAVEN	UNKNOWN	111	98	64,157.00	36,582.30
191	NEW HAVEN	BELGIAN CONGO	MRC-340	44	13,222.00	4,863.10
192	NEW HAVEN	NIGERIA	MRC-342	04	1,061.00	377.40
193	NEW HAVEN	BELGIAN CONGO	GEO-840	111	22,056.00	6,433.70
194	NEW HAVEN	BELGIAN CONGO	GEO-836	108	21,617.00	5,957.60
195	NEW HAVEN	INDIA	MRC-287	03	600.00	218.90
196	NEW HAVEN	BELGIAN CONGO	GEO-839	111	22,057.00	6,045.80
197	NEW HAVEN	BELGIAN CONGO	GEO-816	110	22,433.00	6,763.50
198	NEW HAVEN	BELGIAN CONGO	MRC-336	04	1,221.00	432.50
				SUBTOTAL:	210,268.00	91,088.40

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
199	NEW HAVEN	BELGIAN CONGO	GEO-837	111	22,032.00	5,869.30
200	NEW HAVEN	BELGIAN CONGO	GEO-843	110	21,826.00	6,152.70
201	NEW HAVEN	BELGIAN CONGO	GEO-817	109	21,785.25	6,592.20
202	NEW HAVEN	INDIA	MRC-286	07	1,909.00	588.50
203	NEW HAVEN	BELGIAN CONGO	MRC-339	24	7,220.00	2,586.20
204	NEW HAVEN	BELGIAN CONGO	MRC-293	20	3,986.00	1,305.40
205	NEW HAVEN	NIGERIA	MRC-358	83	24,863.00	9,308.70
206	NEW HAVEN	BELGIAN CONGO	MRC-294	40	8,022.00	2,724.30
207	NEW HAVEN	BRAZIL	Rio E	47	10,798.00	5,568.50
208	NEW HAVEN	UNKNOWN	1116000A	09	3,146.00	1,525.20
209	NEW HAVEN	UNKNOWN	0021671533	03	1,762.00	801.00
210	NEW HAVEN	AUSTRALIA	MRC-324	40	683.00	264.50
211	NEW HAVEN	BELGIAN CONGO	MRC-292	08	1,665.00	537.10
212	NEW HAVEN	BRAZIL	MRC-262	21	4,446.00	1,449.80
213	NEW HAVEN	BELGIAN CONGO	MRC-357	15	3,082.00	940.00
214	NEW HAVEN	RHODESIA	MRC-87	25	7,700.00	4,198.00
215	NEW HAVEN	BRAZIL	MRC-279	15	4,388.00	1,775.80
216	NEW HAVEN	BRAZIL	MRC-113	23	6,642.00	3,439.90
217	NEW HAVEN	LIQUIDO BRAZIL	MRC-138	10	2,853.00	1,410.50
218	NEW HAVEN	BRAZIL	MRC-196	08	2,250.00	1,058.90
219	NEW HAVEN	BRAZIL	MRC-256	09	2,194.00	1,033.60
220	NEW HAVEN	BELGIAN CONGO	MRC-311	03	849.00	547.40
				SUBTOTAL	164,101.25	59,677.50

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
221	NEW HAVEN	NIGERIA	MRC-283	04	1,041.00	630.40
222	NEW HAVEN	NIGERIA	MRC-323	03	781.00	313.50
223	NEW HAVEN	LIQUIDO BRAZIL	22	05	2,153.00	1,010.80
224	NEW HAVEN	LIQUIDO BRAZIL	13	16	7,665.00	4,601.30
225	NEW HAVEN	UNKNOWN	MRC-183	08	2,208.00	1,447.30
226	NEW HAVEN	LIQUIDO BRAZIL	12	09	4,379.00	2,991.70
227	NEW HAVEN	LIQUIDO BRAZIL	20	13	6,535.00	3,317.80
228	NEW HAVEN	LIQUIDO BRAZIL	15	07	3,280.00	1,789.90
229	NEW HAVEN	BELGIAN CONGO	MRC-126	11	2,629.00	1,468.00
230	NEW HAVEN	BRAZIL	MRC-199	07	2,100.00	1,134.40
231	NEW HAVEN	BRAZIL	MRC-129	22	6,424.00	3,237.10
232	NEW HAVEN	LIQUIDO BRAZIL	MRC-139	06	1,595.00	732.70
233	NEW HAVEN	UNKNOWN	1	10	3,000.00	2,022.30
234	NEW HAVEN	UNKNOWN	1A&2	03	694.00	461.80
235	NEW HAVEN	LIQUIDO BRAZIL	MRC-189	11	2,280.00	1,520.10
236	NEW HAVEN	BRAZIL	MRC-259	11	2,191.00	1,122.70
237	NEW HAVEN	UNKNOWN	MRC-180	11	2,196.00	1,452.40
238	NEW HAVEN	LIQUIDO BRAZIL	MRC-173	11	2,200.00	1,464.10
239	NEW HAVEN	UGANDA	MRC-275	03	559.00	185.50
240	NEW HAVEN	AUSTRALIA	MRC-312	01	241.00	173.50
241	NEW HAVEN	BRAZIL	MRC-193	10	2,078.00	1,007.40
242	NEW HAVEN	LIQUIDO BRAZIL	MRC-178	11	2,188.00	1,439.00
				SUBTOTAL	58,417.00	33,523.70

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
243	NEW HAVEN	SALT LAKE CITY, UT	MRC-213	13	3,215.00	2,353.40
244	NEW HAVEN	AUSTRALIA	MRC-318	11	3,080.00	1,986.30
245	NEW HAVEN	NIGERIA	MRC-322	05	1,329.00	534.00
246	NEW HAVEN	RHODESIA	MRC-100	11	3,300.00	1,672.10
247	NEW HAVEN	LIQUIDO BRAZIL	MRC-175	08	2,266.00	1,479.70
248	NEW HAVEN	LIQUIDO BRAZIL	MRC-190	08	2,197.00	1,111.90
249	NEW HAVEN	AUSTRALIA	MRC-326	03	723.00	391.60
250	NEW HAVEN	LIQUIDO BRAZIL	MRC-270	16	4,791.00	2,570.90
251	NEW HAVEN	DIXON, NM	MRC-309	10	2,312.00	1,674.80
252	NEW HAVEN	BRAZIL	MRC-278	22	6,487.00	2,792.00
253	NEW HAVEN	NIGERIA	MRC-77	06	1,174.00	632.90
254	NEW HAVEN	BRAZIL	MRC-271	22	4,387.00	2,347.50
255	NEW HAVEN	NIGERIA	MRC-247	04	843.00	511.70
256	NEW HAVEN	BRAZIL	MRC-263	15	4,404.00	2,152.20
257	NEW HAVEN	UGANDA	MRC-274	02	522.00	193.70
258	NEW HAVEN	UNKNOWN	MRC-179	08	2,185.00	1,415.90
259	NEW HAVEN	BRAZIL	MRC-117	08	2,150.00	1,112.00
260	NEW HAVEN	UNKNOWN	3 NONG	03	1,188.00	416.80
261	NEW HAVEN	AUSTRALIA	RPS	01	1,487.00	791.50
262	NEW HAVEN	SOUTH RHODESIA	1138	16	2,215.00	903.70
263	NEW HAVEN	UNKNOWN	1107(569)	03	1,567.00	958.10
264	NEW HAVEN	NIGERIA	MRC-273	02	595.00	272.70
				SUBTOTAL	52,417.00	28,275.40

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta2O5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
265	NEW HAVEN	BRAZIL	MRC-86	22	4,352.00	2,354.90
266	NEW HAVEN	BRAZIL	MRC-94	22	4,324.00	2,217.80
267	NEW HAVEN	LIQUIDO BRAZIL	MRC-186	12	2,443.00	1,534.40
268	NEW HAVEN	AUSTRALIA	MRC-153	01	300.00	155.60
269	NEW HAVEN	RHODESIA	MRC-162	10	2,026.00	1,121.40
270	NEW HAVEN	AUSTRALIA	MRC-317	07	1,456.00	886.40
271	NEW HAVEN	BELGIAN CONGO	MRC-291	18	3,541.00	1,236.50
272	NEW HAVEN	UGANDA	MRC-333	01	160.00	57.70
273	NEW HAVEN	BELGIAN CONGO	MRC-343	43	8,653.00	3,758.90
274	NEW HAVEN	BRAZIL	MRC-223	22	4,397.00	2,998.80
275	NEW HAVEN	UGANDA	MRC-350	04	838.00	498.50
276	NEW HAVEN	BELGIAN CONGO	MRC-290	05	1,066.00	561.80
277	NEW HAVEN	RHODESIA	MRC-254	07	1,940.00	985.50
278	NEW HAVEN	BRAZIL	MRC-261	08	2,182.00	909.70
279	NEW HAVEN	LIQUIDO BRAZIL	MRC-174	11	2,168.00	1,436.50
280	NEW HAVEN	BRAZIL	MRC-195	08	2,190.00	980.00
281	NEW HAVEN	BRAZIL	1146B	40	4,404.00	2,409.90
282	NEW HAVEN	BRAZIL	1146D	40	4,381.00	2,396.00
283	NEW HAVEN	BRAZIL	1147	113	9,915.00	4,858.40
284	NEW HAVEN	GREAT BRITAIN	1105	43	3,098.00	1,570.70
285	NEW HAVEN	AUSTRALIA	1140	153	9,379.00	3,864.10
286	NEW HAVEN	ENGLAND	1165	11	4,347.00	1,863.10
287	NEW HAVEN	UNKNOWN	111-SWEEPINGS	02	864.00	492.70
				SUBTOTAL	78,424.00	39,149.30

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium				
288	NEW HAVEN	BRAZIL	118	31	8,550.00	4,875.20
289	NEW HAVEN	UNKNOWN	59	08	2,157.00	1,483.80
290	NEW HAVEN	UNKNOWN	60	08	2,125.00	1,358.90
291	NEW HAVEN	BRAZIL	106	16	4,265.00	2,871.20
292	NEW HAVEN	BRAZIL	AS	04	925.00	598.00
293	NEW HAVEN	BELGIAN CONGO	199-C	22	5,355.00	2,401.20
294	NEW HAVEN	BELGIAN CONGO	199-D	11	2,851.00	1,974.30
295	NEW HAVEN	BRAZIL	105	08	2,192.00	1,476.30
296	NEW HAVEN	BELGIAN CONGO	C-DMS-C-1	21	5,670.00	2,743.70
297	NEW HAVEN	UNKNOWN	1053	22	6,594.00	4,439.10
298	NEW HAVEN	UNKNOWN	MGK-108	14	3,660.00	3,212.40
299	NEW HAVEN	UNKNOWN	MGK-112	15	2,162.00	1,012.90
300	NEW HAVEN	BRAZIL	25	05	2,202.00	1,478.90
301	NEW HAVEN	BELGIAN CONGO	MRC-297	07	1,385.00	755.90
302	NEW HAVEN	AUSTRALIA	MRC-325	09	1,740.00	1,087.70
303	NEW HAVEN	UNKNOWN	VA-9	01	167.75	117.10
304	NEW HAVEN	UNKNOWN	ONSP-4E180	04	1,988.00	1,083.30
305	NEW HAVEN	UNKNOWN	11080013	10	5,364.00	3,757.50
306	NEW HAVEN	UNKNOWN	11080014	10	5,308.00	3,723.60
307	NEW HAVEN	UNKNOWN	001060005	18	11,014.00	7,709.80
308	NEW HAVEN	BELGIAN CONGO	GEO-819	107	21,298.50	6,751.60
309	NEW HAVEN	BRAZIL	MRC-243	15	4,368.00	1,384.70
				SUBTOTAL	101,341.25	56,297.10

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium				
310	NEW HAVEN	LIQUIDO BRAZIL	MRC-246	12	3,524.00	2,418.90
311	NEW HAVEN	NIGERIA	MRC-285	03	738.00	460.50
312	NEW HAVEN	NIGERIA	MRC-277	03	879.00	339.50
313	NEW HAVEN	BRAZIL	MRC-228	10	4,676.00	3,161.00
314	NEW HAVEN	LIQUIDO BRAZIL	21	05	2,178.00	1,476.00
315	NEW HAVEN	BRAZIL	26	05	2,184.00	1,398.20
316	NEW HAVEN	NIGERIA	MRC-306	03	612.00	315.10
317	NEW HAVEN	BELGIAN CONGO	MRC-355	67	13,388.00	8,147.90
318	NEW HAVEN	BELGIAN CONGO	GEO-809	98	19,648.00	5,802.10
319	NEW HAVEN	BRAZIL	MRC-226	09	4,500.00	2,984.00
320	NEW HAVEN	BRAZIL	30	34	16,643.00	10,649.90
321	NEW HAVEN	BELGIAN CONGO	MRC-186	15	3,053.00	1,666.00
322	NEW HAVEN	UNKNOWN	MRC-303	33	6,647.00	3,719.00
323	NEW HAVEN	NIGERIA	MRC-321	15	4,475.00	2,797.80
324	NEW HAVEN	BRAZIL	MRC-224	15	4,394.00	2,954.50
325	NEW HAVEN	NIGERIA	MRC-284	07	1,935.00	1,240.50
326	NEW HAVEN	LIQUIDO BRAZIL	MRC-177	11	2,188.00	1,426.40
327	NEW HAVEN	LIQUIDO BRAZIL	MRC-217	22	4,375.00	2,966.30
328	NEW HAVEN	BRAZIL	MRC-222	22	4,393.00	2,966.20
329	NEW HAVEN	BELGIAN CONGO	DMS-206	30	8,052.00	4,582.40
330	NEW HAVEN	BELGIAN CONGO	DMS-216	13	3,323.00	1,456.10
331	NEW HAVEN	AMERICAN	1	03	660.00	334.30
				SUBTOTAL	112,465.00	63,262.60

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium				
332	NEW HAVEN	UNKNOWN	001	13	3,768.00	2,638.70
333	NEW HAVEN	SWEDEN	001	17	4,055.00	2,259.00
334	NEW HAVEN	NIGERIA	002	09	2,257.00	1,408.60
335	NEW HAVEN	UNKNOWN	MRC-320	02	408.00	222.90
336	NEW HAVEN	BRAZIL	MRC-276	10	2,920.00	1,841.40
337	NEW HAVEN	AUSTRALIA	MRC-315	11	3,086.00	1,383.10
338	NEW HAVEN	BRAZIL	MRC-206	08	2,200.00	1,356.50
339	NEW HAVEN	LIQUIDO BRAZIL	MRC-239	08	2,192.00	1,384.50
340	NEW HAVEN	BRAZIL	MRC-238	08	2,177.00	1,397.00
341	NEW HAVEN	AUSTRALIA	MRC-150	05	1,282.00	855.60
342	NEW HAVEN	AUSTRALIA	MRC-314	02	406.00	277.60
343	NEW HAVEN	BELGIAN CONGO	MRC-151	06	1,270.00	906.70
344	NEW HAVEN	BRAZIL	MRC-219	21	4,311.00	2,922.00
345	NEW HAVEN	BRAZIL	MRC-265	22	4,386.00	2,924.10
346	NEW HAVEN	BRAZIL	MRC-267	15	4,395.00	2,916.10
347	NEW HAVEN	BRAZIL	MRC-268	15	4,380.00	2,919.70
348	NEW HAVEN	NIGERIA	MRC-282	03	739.00	309.70
349	NEW HAVEN	LIQUIDO BRAZIL	MRC-91	95	28,340.00	19,038.80
350	NEW HAVEN	BRAZIL	MRC-245	15	4,504.00	3,097.00
351	NEW HAVEN	BELGIAN CONGO	GEO-832	16	3,090.00	1,392.40
352	NEW HAVEN	BRAZIL	MRC-218	22	4,380.00	2,972.70
353	NEW HAVEN	AUSTRALIA	MRC-251	12	2,470.00	1,576.60
				SUBTOTAL	87,016.00	56,000.70

Minimum Offer Quantity - one line item

Offer must be in pounds (LBS) Tantalum (Ta) Pentoxide
(LBS $Ta2O_5$)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium				
354	NEW HAVEN	NIGERIA	MRC-359	12	2,303.00	1,477.60
355	NEW HAVEN	UNKNOWN	MRC-305	02	411.00	207.60
356	NEW HAVEN	UNKNOWN	MRC-244	21	4,247.00	2,884.10
357	NEW HAVEN	NIGERIA	MRC-164	02	486.00	305.60
358	NEW HAVEN	BELGIAN CONGO	MRC-295	12	2,400.00	1,488.50
359	NEW HAVEN	BELGIAN CONGO	GEO-831	15	3,007.00	1,398.00
360	NEW HAVEN	UGANDA	MRC-308	05	1,005.00	439.90
361	NEW HAVEN	NIGERIA	MRC-144	05	952.00	578.90
362	NEW HAVEN	BRAZIL	MRC-266	22	4,393.00	2,961.80
363	NEW HAVEN	BRAZIL	MRC-216	22	4,426.00	2,996.00
364	NEW HAVEN	AUSTRALIA	MRC-300	02	311.00	130.90
365	NEW HAVEN	UNKNOWN	MRC-352	09	1,824.00	774.50
366	NEW HAVEN	LIQUIDO BRAZIL	MRC-176	11	2,158.00	1,435.10
367	NEW HAVEN	UNKNOWN	MRC-353	06	1,235.00	619.80
368	NEW HAVEN	UNKNOWN	MRC-348	02	314.00	162.90
369	NEW HAVEN	BELGIAN CONGO	MRC-296	07	1,369.00	586.90
370	NEW HAVEN	UNKNOWN	MRC-92	08	1,604.00	1,090.90
371	NEW HAVEN	BRAZIL	1146A	40	4,326.00	2,943.40
372	NEW HAVEN	BRAZIL	1146E	50	5,493.00	3,806.60
373	NEW HAVEN	BRAZIL	1146	40	4,407.00	2,978.70
374	NEW HAVEN	BRAZIL	1146F	50	5,485.00	3,743.00
375	NEW HAVEN	BRAZIL	1146G	60	6,618.00	4,570.40
				SUBTOTAL	58,774.00	37,581.10

Minimum Offer Quantity - one line item

Offer must be in pounds (LBS) Tantalum (Ta) Pentoxide
(LBS Ta_2O_5)

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium				
376	NEW HAVEN	BRAZIL	1146C	40	4,395.00	2,983.30
377	NEW HAVEN	MALAYA	2272	08	2,026.00	1,032.70
378	NEW HAVEN	AUSTRALIA	2329	03	715.00	368.80
379	NEW HAVEN	BELGIAN CONGO	207	07	1,699.00	946.50
380	NEW HAVEN	UNKNOWN	MGK-199	24	13,268.00	11,383.90
381	NEW HAVEN	DE STAFFANY CANADA	MRC-280	03	650.00	236.10
382	NEW HAVEN	BELGIAN CONGO	GEO-822C	13	2,443.00	1,288.90
383	NEW HAVEN	UNKNOWN	0021980001	04	1,771.00	976.50
				SUBTOTAL	26,967.00	19,216.70
				GRAND TOTAL:	1,395,707.50	647,321.70

Minimum Offer Quantity - one line item

Offer must be in pounds (LBS) Tantalum (Ta) Pentoxide (LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Uranium				
384	SCOTIA	BELGIAN CONGO	B-065	02	1,600.00	410.90
385	SCOTIA	BELGIAN CONGO	B-066	02	1,600.00	400.00
386	SCOTIA	BELGIAN CONGO	B-076	03	2,400.00	812.60
387	SCOTIA	BRAZIL	B-181	03	2,700.00	837.50
388	SCOTIA	BELGIAN CONGO	B-203	04	3,600.00	1,224.00
389	SCOTIA	BELGIAN CONGO	B-286	04	3,400.00	921.40
390	SCOTIA	BELGIAN CONGO	B-352	03	2,700.00	955.50
391	SCOTIA	UNKNOWN	B-367	02	1,800.00	559.10
392	SCOTIA	BELGIAN CONGO	B-419	04	3,600.00	1,077.80
393	SCOTIA	BELGIAN CONGO	B-440	04	3,600.00	1,212.50
394	SCOTIA	BELGIAN CONGO	B-470	02	1,700.00	404.10
395	SCOTIA	BELGIAN CONGO	B-471	02	1,700.00	471.60
396	SCOTIA	BELGIAN CONGO	B-473	03	2,700.00	804.60
397	SCOTIA	BELGIAN CONGO	B-501	03	2,700.00	970.90
398	SCOTIA	SOUTH AFRICA	B-536	02	1,800.00	548.30
399	SCOTIA	UNKNOWN	B-542	01	800.00	280.30
400	SCOTIA	SOUTH AFRICA	B-556	02	1,800.00	594.70
401	SCOTIA	BELGIAN CONGO	B-010	06	5,400.00	1,748.50
402	SCOTIA	AFRICA	B-091	10	8,000.00	2,690.40
403	SCOTIA	BELGIAN CONGO	B-141	03	2,400.00	842.60
404	SCOTIA	BELGIAN CONGO	B-349	03	2,700.00	957.40
405	SCOTIA	PORTUGAL	B-359	04	3,600.00	1,236.20
				SUBTOTAL	62,300.00	19,960.90

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	Tantalum Minerals More Than 0.05% Combined Thorium and Ur				
406	SCOTIA	PORTUGAL	B-374	06	5,400.00	1,753.40
407	SCOTIA	BELGIAN CONGO	B-417	07	5,950.00	1,601.70
408	SCOTIA	BELGIAN CONGO	B-420	03	2,700.00	844.60
409	SCOTIA	BRAZIL	B-455	05	4,500.00	1,261.40
410	SCOTIA	BELGIAN CONGO	B-468	09	8,100.00	2,623.60
411	SCOTIA	MOZAMBIQUE	B-492	07	6,300.00	2,066.40
412	SCOTIA	BELGIAN CONGO	B-494	02	1,800.00	628.60
413	SCOTIA	BELGIAN CONGO	B-495	03	2,700.00	813.20
414	SCOTIA	BELGIAN CONGO	B-500	05	4,250.00	1,423.80
415	SCOTIA	BELGIAN CONGO	B-509	14	11,900.00	4,179.30
416	SCOTIA	UNKNOWN	B-331	01	850.00	296.30
417	SCOTIA	BELGIAN CONGO	B-491	02	1,700.00	753.80
418	SCOTIA	BELGIAN CONGO	B-039	10	8,000.00	2,264.00
419	SCOTIA	BELGIAN CONGO	B-047	02	1,600.00	416.20
420	SCOTIA	BELGIAN CONGO	B-072	06	4,800.00	1,639.70
421	SCOTIA	BELGIAN CONGO	B-150	07	5,600.00	1,908.50
422	SCOTIA	BELGIAN CONGO	B-192	18	16,200.00	4,451.80
423	SCOTIA	BELGIAN CONGO	B-193	10	9,000.00	2,590.20
424	SCOTIA	BELGIAN CONGO	B-211	11	9,900.00	3,029.40
425	SCOTIA	PORTUGAL	B-257	24	21,600.00	5,551.20
426	SCOTIA	MOZAMBIQUE	B-271	02	1,800.00	486.20
427	SCOTIA	BELGIAN CONGO	B-309	09	7,650.00	2,688.20
				SUBTOTAL	142,300.00	43,271.50

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta2O5)

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 2	**Tantalum Minerals More Than 0.05% Combined Thorium and Ura**				
428	SCOTIA	PORTUGAL	B-315	22	19,800.00	5,755.90
429	SCOTIA	BELGIAN CONGO	B-360	10	9,000.00	3,095.10
430	SCOTIA	BELGIAN CONGO	B-366	03	2,700.00	851.00
431	SCOTIA	BELGIAN CONGO	B-378	03	2,550.00	834.40
432	SCOTIA	BR. MALAYA	B-391	03	2,700.00	670.10
433	SCOTIA	PORTUGAL	B-487	24	21,600.00	6,246.70
434	SCOTIA	BELGIAN CONGO	B-502	09	8,100.00	2,424.30
435	SCOTIA	BELGIAN CONGO	B-529	19	16,150.00	5,394.10
436	SCOTIA	BELGIAN CONGO	B-004	11	9,900.00	2,613.60
437	SCOTIA	MOZAMBIQUE	B-056	08	6,400.00	1,661.40
438	SCOTIA	BELGIAN CONGO	B-180	24	21,600.00	7,439.00
439	SCOTIA	BELGIAN CONGO	B-194	24	21,600.00	7,236.00
440	SCOTIA	BELGIAN CONGO	B-217	24	21,600.00	7,436.90
441	SCOTIA	BELGIAN CONGO	B-224	24	21,600.00	7,486.60
442	SCOTIA	BELGIAN CONGO	B-245	24	21,600.00	7,387.20
443	SCOTIA	BELGIAN CONGO	B-249	24	21,600.00	7,456.30
444	SCOTIA	BELGIAN CONGO	B-269	10	8,500.00	2,929.10
445	SCOTIA	BELGIAN CONGO	B-299	25	21,250.00	7,531.00
446	SCOTIA	BRAZIL	B-371	06	5,400.00	1,051.90
				SUBTOTAL	263,650.00	85,500.60

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide (Ta_2O_5)

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Urani				
447	SCOTIA	BELGIAN CONGO	B-200	03	2,700.00	824.00
448	SCOTIA	UNKNOWN	B-524	02	1,600.00	416.30
449	SCOTIA	BELGIAN CONGO	B-231	07	6,300.00	1,654.40
450	SCOTIA	BELGIAN CONGO	B-234	10	9,000.00	2,149.20
451	SCOTIA	BELGIAN CONGO	B-431	06	5,400.00	1,499.00
452	SCOTIA	BELGIAN CONGO	B-258	01	900.00	388.40
453	SCOTIA	BELGIAN CONGO	B-014	06	5,400.00	1,186.90
454	SCOTIA	AFRICA	B-233	20	17,000.00	6,215.20
				SUBTOTAL	48,300.00	14,333.40
				TOTAL	516,550.00	163,066.40

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide (LBS Ta_2O_5)

E. Tantalum/Columbium Concentrates

ITEM NO.	STORAGE LOCATION	ORIGIN	LOT NO.	NO. UNITS	BULK WT.(LBS.)	Ta_2O_5 WEIGHT
	Category 1	Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium				
455	WARREN	UNKNOWN	096	98	68,599.00	22,082.00
456	WARREN	UNKNOWN	097	78	61,599.00	19,884.20
457	WARREN	UNKNOWN	098	128	89,599.00	28,402.90
458	WARREN	UNKNOWN	099	128	89,599.00	27,282.90
459	WARREN	UNKNOWN	100	128	89,599.00	26,978.30
460	WARREN	UNKNOWN	101	128	89,599.00	27,462.10
461	WARREN	UNKNOWN	102	128	89,599.00	26,279.40
462	WARREN	UNKNOWN	106	128	89,599.00	27,668.20
463	WARREN	UNKNOWN	107	128	89,599.00	28,626.90
464	WARREN	UNKNOWN	109	128	89,599.00	28,295.40
465	WARREN	UNKNOWN	110	128	89,599.00	27,238.10
466	WARREN	UNKNOWN	111	128	89,599.00	27,193.30
467	WARREN	UNKNOWN	112	128	89,599.00	27,103.70
468	WARREN	UNKNOWN	113	128	89,599.00	27,838.40
469	WARREN	UNKNOWN	115	128	89,599.00	28,582.10
470	WARREN	UNKNOWN	117	128	89,599.00	27,256.00
471	WARREN	UNKNOWN	118	128	89,599.00	27,515.90
472	WARREN	UNKNOWN	119	128	89,599.00	26,781.10
473	WARREN	UNKNOWN	120	128	89,599.00	26,386.90
474	WARREN	UNKNOWN	121	128	89,599.00	27,838.40
475	WARREN	UNKNOWN	122	128	89,599.00	26,637.80
476	WARREN	UNKNOWN	126	128	89,599.00	26,664.70
477	WARREN	UNKNOWN	127	128	89,599.00	26,019.50
478	WARREN	UNKNOWN	128	128	89,599.00	25,894.10
479	WARREN	UNKNOWN	129	128	89,599.00	27,184.30
480	WARREN	UNKNOWN	130	128	89,599.00	26,342.10
					2,280,574.00	695,438.70

Minimum Offer Quantity - one line item

Offer price must be in pounds (LBS) Tantalum (TA) Pentoxide
(LBS Ta_2O_5)

Item No.	Storage Location	Lot/Ingot Number	Producer	Quantity Columbium (Cb) Net Wt.(LBS)	Quantity per LB Cb
20	Binghamton, NY	ECB 1061 R1	H.C.STARK DOMESTIC	1,357.20	1,355.20
23	Binghamton, NY	NB 73010-1	CABOT CORP. DOMESTIC	2,453.00	2,451.77
24	Binghamton, NY	NB 73011-1	CABOT CORP. DOMESTIC	2,387.00	2,386.28
25	Binghamton, NY	NB 73013-1	CABOT CORP. DOMESTIC	2,408.00	2,406.80
26	Binghamton, NY	NB 73014-1	CABOT CORP. DOMESTIC	2,392.00	2,390.80
27	Binghamton, NY	NB 73015-1	CABOT CORP. DOMESTIC	2,482.00	2,480.51
28	Binghamton, NY	NB 73016-1	CABOT CORP. DOMESTIC	2,491.00	2,490.00
30	Binghamton, NY	NB 73018-1	CABOT CORP. DOMESTIC	2,499.00	2,498.00
32	Binghamton, NY	NB 73020-1	CABOT CORP. DOMESTIC	2,500.00	2,499.25
33	Binghamton, NY	NB 73022-1	CABOT CORP. DOMESTIC	2,533.00	2,531.99
34	Binghamton, NY	NB 73024-1	CABOT CORP. DOMESTIC	2,483.00	2,482.01
36	Binghamton, NY	NB 73033-1	CABOT CORP. DOMESTIC	2,594.00	2,592.70
38	Binghamton, NY	NB 73035-1	CABOT CORP. DOMESTIC	2,649.00	2,647.94
42	Binghamton, NY	NB 73040-1	CABOT CORP. DOMESTIC	2,556.00	2,554.98
43	Binghamton, NY	NB 73041-1	CABOT CORP. DOMESTIC	2,600.00	2,598.96
44	Binghamton, NY	NB 73042-1	CABOT CORP. DOMESTIC	2,443.00	2,442.02
45	Binghamton, NY	NB 73060-1	CABOT CORP. DOMESTIC	2,491.00	2,489.75
46	Binghamton, NY	NB 73062-1	CABOT CORP. DOMESTIC	2,473.00	2,470.77
47	Binghamton, NY	NB 73063-1	CABOT CORP. DOMESTIC	2,422.00	2,420.79
48	Binghamton, NY	NB 73064-1	CABOT CORP. DOMESTIC	2,421.00	2,419.79

Item NO.	Storage Location	Lot/Ingot Number	Producer	Quantity Columbium (Cb) Net Wt.(LBS)	Quantity Columbium (Cb) per LB Cb
49	Binghamton, NY	NB 73067-1	CABOT CORP. DOMESTIC	2,474.00	2,473.01
55	Binghamton, NY	NB 73077-1	CABOT CORP. DOMESTIC	2,509.00	2,508.24
57	Binghamton, NY	NB 73079-1	CABOT CORP. DOMESTIC	2,501.00	2,500.25
58	Binghamton, NY	NB 73081-1	CABOT CORP. DOMESTIC	2,508.00	2,507.25
59	Binghamton, NY	NB 73086-2	CABOT CORP. DOMESTIC	2,323.00	2,321.61
60	Binghamton, NY	NB 73119-3	CABOT CORP. DOMESTIC	2,574.00	2,572.20
66	Binghamton, NY	NB 83947-2	CABOT CORP. DOMESTIC	2,540.00	2,532.38
70	Binghamton, NY	NB 83955-2	CABOT CORP. DOMESTIC	2,416.00	2,413.83
71	Binghamton, NY	NB 83956-2	CABOT CORP. DOMESTIC	2,450.00	2,447.80
72	Binghamton, NY	NB 83957-2	CABOT CORP. DOMESTIC	2,455.00	2,452.55
73	Binghamton, NY	NB 83961-2	CABOT CORP. DOMESTIC	2,542.00	2,539.71
74	Binghamton, NY	NB 83962-2	CABOT CORP. DOMESTIC	2,425.00	2,422.58
75	Binghamton, NY	NB 83963-2	CABOT CORP. DOMESTIC	2,450.00	2,447.80
			TOTAL	**32,167.00**	**32,139.21**

Minimum Offer Quantity - one line item

Offer price must be in pounds (LB) contained Columbium (Cb)

(There are 2 ingot pieces per cradle per lot.)

I.3 Certificate of Independent Price Determination (JAN 02)

a. The Contractor certifies that:

1. The prices in each quote have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other Quoters or competitor relating to (i) each quote, (ii) the intention to submit a quote, or (iii) the methods or factors used to calculate the price quoted;

2. The prices in each quote have not been and will not be knowingly disclosed by the Quoter, directly or indirectly, to any other Quoter or competitor before contract award unless otherwise required by law; and

3. No attempt has been made or will be made by the Quoter to induce any other concern to submit or not to submit a quote for purposes of restricting competition.

b. Each signature on the quote is considered to be a certification by the signatory that the signatory:

1. Is the person in the Quoter's organization responsible for determining the prices being quoted, and that the signatory has not participated and will not participate in any action contrary to subparagraph a.(1) through a.(3) above; or

2. (i) Has been authorized, in writing, to act as agent;

(ii) As an authorized agent, does certify that the principals have not participated, and will not participate, in any action contrary to **subparagraphs a.1 through a.3** above.

c. If the Quoter deletes or modifies **subparagraph a.(2)** above, the Quoter must furnish with its Quote a signed statement setting forth in detail the circumstances of the disclosure.

I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, Environmental Compliance and Other Responsibility Matters (JUL 97)

a. (1) The Contractor certifies, to the best of its knowledge and belief, that –

(i) The Contractor and/or any of its Principals –

(A) Are (____) are not (____) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have (___) have not (___), within a three-year period preceding this Agreement, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of quotes, or commission of embezzlement, theft, forgery, bribery, falsification or destruction of record, making false statement, or receiving stolen property; and

(C) Are (___) are not (___) presently indicted for, or otherwise criminally or civilly charged by a government entity with, commission of any of the offenses enumerated in subdivision a.(1)(i)(B) of this provision.

(D) Are (___) are not (___) presently indicted for or otherwise criminally or civilly charged by a Federal, state or local entity with violation of any environmental laws;

(E) Have (___) have not (___) within the three-year period preceding this Agreement, been convicted of or had a civil judgment rendered against them for violation of a Federal, state or local environmental statue or regulation.

(ii) The Contractor has (___) has not (___), within a three-year period preceding this Agreement, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers, directors, owners, partners, and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

(3) If the Contractor answers affirmatively to anything in a.(1), above, the Contractor shall include in its Agreement an explanation of the circumstances, including the outcome.

This certification concerns a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under section 1001, title 18, United States Code.

b. The Contractor shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Contractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

c. A certification that any of the items in paragraph a. of this provision exists will not necessarily result in withholding of an award under this Agreement. However, the certification will be considered in connection with a determination of the Contractor's responsibility. Failure of the Contractor to furnish a certification or provide such additional information as requested by the Contracting officer may render the Contractor nonresponsible.

d. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith, the certification required by paragraph a. of this provision. The knowledge and information of a Contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

e. The certification in paragraph a. of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Contractor knowingly rendered an erroneous certification, in addition to the other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this Agreement for default.

I.5 Type of Business Organization (APR 96)

The Contractor represents that –

a. It operates as ☐ a corporation incorporated under the laws of the State of _____, ☐ an individual, ☐ a partnership, ☐ a nonprofit organization, or ☐ a joint venture.

b. If the Contractor is a foreign entity, it operates as ☐ an individual, ☐ a partnership, ☐ a nonprofit organization, ☐ a joint venture, or ☐ a corporation registered for business in _____ (country)

c. If the Contractor is a corporation, it is ☐ independent (not owned or controlled by another company), ☐ owned or controlled by _____ corporation/company registered for business in _____ (state/country).

d. If the Contractor is owned or controlled by another, state the relationship (e.g., wholly owned subsidiary, etc.): _____

e. The Contractor agrees to provide additional information relating to the above representations if requested to do so by the Contracting Officer.

I.6 Persons Authorized to Request Shipment of Material (FEB 98)

The Contractor shall provide the name(s), title(s), signature(s), and telephone number(s) of representative(s) authorized to sign Section **J.3 Shipping Instructions:**

Typed Name	Title
Signature	Telephone
Typed Name	Title
Signature	Telephone

I.7 Contractor's Billing Address (JUL 96)

The Contractor shall provide its billing address and billing facsimile number below, if different from the address in Section I.1 Quote/Award Form:

_____

_____

_____

_____

_____

SECTION J – LIST OF ATTACHMENTS

J.1 Tantalum Analyses (FEB 03)

J.1.1 Columbium Analyses (FEB 03)

J.2 Storage Locations (FEB 03)

J.3 Shipping Instructions (JAN 95)

J.4 Material Safety Data Sheets (OCT 02)

J.5 Fedwire Procedures (JAN 95)

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A. Tantalum Carbide

Item No.	STORAGE LOCATION	LOT NO.	PRODUCER	NO. OF BOXES	BULK WEIGHT (LBS.)	% BY WEIGHT Ta	Cb	Ca	Fe	Si	Ti	TOTAL CARBON	FREE CARBON
18	Warren, OH	9	Kennametal Domestic	3	900	93.70	0.13	*	0.01	0.001	*	6.10	0.02
19	Warren, OH	10	Kennametal Domestic	3	900	93.71	0.1	*	0.01	0.003	0.005	6.15	0.002
20	New Haven, IN	2	Kennametal Domestic	3	900	93.84	0.1	<0.01	0.007	<0.005	<0.001	6.10	0.03
21	New Haven, IN	2	Wah Chang Domestic	4	1,350	94.10	0.08	<0.01	0.04	<0.01	<0.01	6.11	0.07
22	Somerville	8	Wah Chang Domestic	3	900	94.17	0.08	<0.01	0.04	<0.01	<0.01	6.17	0.09
23	Somerville, NJ	10	Wah Chang Domestic	3	900	94.27	0.08	<0.01	0.07	<0.01	<0.01	6.22	0.09
24	Somerville, NJ	11	Wah Chang Domestic	3	900	94.17	0.08	<0.01	0.05	<0.01	<0.01	6.18	0.10
25	Somerville, NJ	12	Wah Chang Domestic	3	900	94.27	0.08	<0.01	0.05	<0.01	<0.01	6.23	0.09
26	Somerville, NJ	8	Kennametal Domestic	3	900	93.55	0.15	0.10	0.02	*	0.001	6.17	0.02
27	Somerville, NJ	11	Kennametal Domestic	3	900	93.84	0.01	<0.01	0.003	<0.001	<0.001	6.14	0.02
28	Somerville, NJ	12	Kennametal Domestic	3	900	93.72	0.11	0.05	0.01	<0.001	<0.001	6.10	0.02
29	Somerville, NJ	15	Kennametal Domestic	3	900	93.72	0.10	0.01	0.02	0.01	*	6.16	0.03
30	Somerville, NJ	16	Kennametal Domestic	3	900	93.45	0.30	0.07	0.02	0.01	*	6.14	0.03
31	Somerville, NJ	17	Kennametal Domestic	3	800	93.65	0.15	*	0.01	0.005	*	6.17	0.03
			TOTAL:	**43**	**12,950**								

NOTES: * Not available

The analysis results included in the Subsection J.1 are for ***informational purpose only*** . See Subsection A.2., paragraph b.

B. Tantalum Metal, Vaccum Grade

Producer: H.C. STARCK

Item #	Ingot	Ta	O	N	C	S	H	Fe	Ni	Cu	Si	Mn	Mo	W	Ti	Nb	Al	Sb	Hf	Re	Ag	Sn	Zr	Bi	Se	Te	Pb	Tl
2	ETA 911-R1	99.94%	0.0062	0.0010	0.0012	<0.0005	0.0002	0.0006	<0.0005	0.0004	<0.0008	<0.0010	0.0087	0.0103	<0.0005	0.0146	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	0.00002
3	ETA 912-R1	99.91%	0.0094	0.0008	0.0031	<0.0005	0.0018	0.0020	<0.0005	0.0009	<0.0008	<0.0010	0.0190	0.0183	<0.0005	0.0157	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
4	ETA 913-R1	99.93%	0.0022	0.0016	0.0050	<0.0005	0.0011	<0.0005	<0.0005	0.0023	<0.0008	<0.0010	0.0087	0.0171	0.0006	0.0109	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	0.00001	<0.00001
5	ETA 914-R1	99.95%	0.0010	0.0008	0.0031	<0.0005	<0.0001	0.0009	<0.0005	0.0002	<0.0008	<0.0010	0.0026	0.0084	<0.0005	0.0114	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
6	ETA 915-R1	99.92%	0.0044	0.0018	0.0048	<0.0005	0.0002	<0.0005	<0.0005	0.0023	<0.0008	<0.0010	0.0138	0.0138	<0.0086	0.0222	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	0.00002	<0.00001
9	ETA 918-R1	99.94%	0.0034	0.0016	<0.0005	<0.0005	0.0002	<0.0005	<0.0005	0.0011	<0.0008	<0.0010	0.0008	0.0152	<0.0005	0.0116	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
10	ETA 921-R1	99.95%	0.0020	0.0010	0.0024	<0.0005	<0.0001	<0.0005	<0.0005	0.0014	<0.0008	<0.0010	0.0015	0.0078	<0.0005	0.0105	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
12	ETA 923-R1	99.91%	0.0124	0.0014	0.0009	<0.0005	<0.0001	<0.0005	<0.0005	0.0001	<0.0008	<0.0010	0.0024	0.0102	<0.0005	0.0363	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	0.00001	<0.00001
13	ETA 924-R1	99.93%	0.0020	0.0018	0.0008	<0.0005	<0.0001	0.0010	<0.0005	0.0006	<0.0008	<0.0010	0.0007	0.0075	<0.0005	0.0287	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
15	ETA 926-R1	99.92%	0.0064	0.0024	0.0011	<0.0005	<0.0001	0.0040	<0.0005	0.0006	<0.0008	<0.0010	0.0007	0.0177	<0.0005	0.0257	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	0.00001	<0.00001
17	ETA 959-R1	99.95%	0.0011	0.0009	<0.0005	<0.0005	<0.0001	<0.0005	<0.0005	0.0003	<0.0008	<0.0010	<0.0005	0.0149	<0.0005	0.0095	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
19	ETA 963-R1	99.95%	0.0056	0.0014	0.0007	<0.0005	0.0001	<0.0005	<0.0005	<0.0001	<0.0008	<0.0010	<0.0005	0.0058	<0.0005	0.0148	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
20	ETA 964-R1	99.95%	0.0087	0.0015	0.0005	<0.0005	0.0001	<0.0005	<0.0005	0.0003	<0.0008	<0.0010	<0.0005	<0.0040	<0.0005	0.0148	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
21	ETA 965-R1	99.95%	0.0074	0.0011	<0.0005	<0.0005	0.0001	<0.0005	0.0006	0.0003	<0.0008	<0.0010	0.0012	<0.0040	<0.0005	0.0140	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
22	ETA 966-R1	99.96%	0.0036	0.0018	<0.0005	<0.0005	<0.0001	<0.0005	0.0007	<0.0001	<0.0008	<0.0010	0.0008	<0.0040	<0.0005	0.0116	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
23	ETA 967-R1	99.95%	0.0024	0.0010	0.0034	<0.0005	0.0009	<0.0005	0.0010	0.0002	<0.0008	<0.0010	0.0008	<0.0040	<0.0005	0.0158	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
24	ETA 968-R1	99.94%	0.0048	0.0018	0.0008	<0.0005	0.0006	<0.0005	0.0007	0.0001	<0.0008	<0.0010	<0.0005	<0.0040	<0.0005	0.0261	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
25	ETA 969-R1	99.94%	0.0098	0.0020	0.0007	<0.0005	<0.0001	<0.0005	<0.0005	<0.0001	<0.0008	<0.0010	<0.0005	<0.0040	<0.0005	0.0238	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
26	ETA 971-R1	99.94%	0.0077	0.0022	0.0008	<0.0005	<0.0001	<0.0005	<0.0005	0.0003	<0.0008	<0.0010	0.0017	0.0159	<0.0005	0.0132	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
27	ETA 972-R1	99.96%	0.0010	0.0008	0.0008	<0.0005	<0.0001	<0.0005	0.0007	<0.0001	<0.0008	<0.0010	0.0008	<0.0040	<0.0005	0.0116	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
28	ETA 973-R1	99.96%	0.0063	0.0012	0.0006	<0.0005	<0.0001	<0.0005	<0.0005	<0.0001	<0.0008	<0.0010	<0.0005	<0.0040	<0.0005	0.0071	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
32	ETA 977-R1	99.95%	0.0037	0.0012	<0.0005	<0.0005	0.0001	0.0028	<0.0005	0.0002	<0.0008	<0.0010	<0.0005	0.0046	<0.0005	0.0140	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
34	ETA 979-R1	99.96%	0.0030	0.0016	<0.0005	<0.0005	0.0001	0.0054	<0.0005	0.0003	<0.0008	<0.0010	0.0006	<0.0040	<0.0005	0.0043	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
39	ETA 1024-R1	99.94%	0.0081	0.0017	0.0030	<0.0005	0.0003	0.0028	0.0010	0.0012	<0.0008	<0.0010	0.0023	<0.0040	<0.0005	0.0146	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	0.00001	<0.00001
40	ETA 1025-R1	99.93%	0.0052	0.0018	0.0051	<0.0005	0.0001	0.0010	0.0014	<0.0001	<0.0008	<0.0010	0.0021	0.0168	<0.0005	0.0187	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
41	ETA 1026-R1	99.92%	0.0044	0.0016	0.0014	<0.0005	<0.0001	0.0016	<0.0005	0.0015	<0.0008	<0.0010	0.0034	0.0142	<0.0005	0.0346	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
42	ETA 1028-R1	99.97%	0.0025	0.0010	0.0012	<0.0005	0.0003	<0.0005	<0.0005	0.0005	<0.0008	<0.0010	0.0012	0.0081	<0.0005	0.0072	<0.0010	<0.0020	<0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
43	ETA 1029-R1	99.91%	0.0038	0.0009	0.0027	<0.0005	0.0001	0.0006	<0.0005	0.0005	<0.0008	<0.0010	0.0019	0.0182	<0.0005	0.0344	<0.0010	<0.0020	0.0026	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
44	ETA 1030-R1	99.96%	0.0069	0.0014	0.0005	<0.0005	<0.0001	<0.0005	<0.0005	0.0013	<0.0008	<0.0010	0.0020	0.0072	<0.0005	0.0035	<0.0010	<0.0020	0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001
45	ETA 1031-R1	99.96%	0.0054	0.0019	0.0006	<0.0005	<0.0001	<0.0005	<0.0005	<0.0001	<0.0008	<0.0010	0.0012	0.0068	<0.0005	0.0011	<0.0010	<0.0020	0.0020	<0.0100	<0.0005	<0.0010	<0.0010	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001

B. Tantalum Metal, Vacuum Grade

Producer: CABOT PERFORMANCE MATERIALS

Item #	Ingot	C	O	N	H	Ta	Nb	Ti	Fe	Ag	Sb	As	Bi	Cd	Ga	Mn	Si	Sn	Ni	Cr	Ca	Na	Al	Hf	Pb	Re	Te	Tl	Th	Mo	Cu	Zr	Co	Mg	B	W	V	Zn	P	S	Se	Cl
49	TA 80508-3	<10	75	15	<5	99.98%	100	<5	<5	1	<5	<5	<1	<10	<5	<5	30	<5	15	10	<5	N.D.	<5	<25	<1	<10	<5	<5	<25	10	<5	<5	<5	<5	1	25	<5	<25	N.D.	<10	<1	N.D.
52	TA 80576-2	<10	55	<10	<5	99.98%	40	<5	5	3	<5	<5	<1	<10	<5	<5	20	<5	<5	<5	<5	N.D.	<5	<25	2	<10	<1	<1	<25	<5	10	<5	<5	<5	<1	50	<5	<25	<5	<10	<1	<100
54	TA 80598-2	<10	30	20	15	99.96%	120	<5	<5	5	<5	5	<1	<10	<5	<5	<5	<5	<5	<5	<5	N.D.	<5	<25	<1	<10	<1	<1	<25	15	<5	<5	<5	<5	<1	80	<5	<25	N.D.	<10	<1	N.D.
71	TA 80668-2	15	30	15	<5	99.98%	140	<5	<5	1	<5	<5	<1	<10	<5	<5	10	<5	<5	<5	<5	N.D.	<5	<25	<1	25	<1	<1	<25	<5	<5	<5	<5	<5	<1	<25	<5	<25	N.D.	<10	<1	N.D.
73	TA 80671-2	<10	20	10	<5	99.98%	120	<5	<5	1	<5	<5	<1	50	5	<5	5	<5	<5	<5	<5	<50	<5	<25	1	5	<1	<1	<25	5	10	<5	<5	<5	<1	<25	25	<25	N.D.	<10	<1	N.D.
76	TA 80687-2	<5	60	15	<5	99.98%	120	<5	<5	1	<5	<5	<1	<10	<5	<5	10	<5	<5	<5	5	N.D.	<5	<25	1	<10	<1	<1	<25	10	<5	<5	<5	<5	1	<25	<5	<25	N.D.	<10	<1	N.D.
78	TA 80690-2	5	<10	<10	<5	99.97%	180	<5	<5	<1	<5	<5	<1	<10	<5	<5	5	<5	<5	<5	10	N.D.	<5	<25	1	<10	<1	<1	<25	5	<5	<5	<5	<5	<1	<25	<5	<25	N.D.	<10	<1	N.D.
81	TA 80705-2	5	20	<10	<5	99.97%	145	<5	<5	<1	<5	5	<1	<10	50	<5	10	<5	<5	<5	<5	N.D.	<5	<25	<1	<10	<1	<1	<25	<5	<5	<5	<5	<5	<1	<25	<5	<25	N.D.	<10	<1	N.D.
86	TA 80714-2	5	<10	<10	<5	99.98%	115	<5	<5	5	<5	<5	<1	<10	5	<5	10	<5	<5	<5	<5	N.D.	<5	<25	1	<10	<1	<1	<25	<5	<5	<5	<5	<5	1	<25	<5	<25	N.D.	<10	<1	N.D.
87	TA 80715-2	10	10	<10	<5	99.98%	140	<5	<5	1	<5	<5	<1	<10	<5	<5	10	<5	<5	<5	10	N.D.	<5	<25	<1	<10	<1	<1	<25	5	5	<5	<5	<5	<1	<25	10	<25	N.D.	<10	<1	N.D.

NOTE: All results in parts per million (ppm)

C. Tantalum Metal, Capacitor Grade

ITEM NO.	STORAGE LOCATION	FORM/ GRADE	LOT NUMBER	NO. OF BOXES	PRODUCER	QUANTITY Tantalum (Ta) Net Wt. (lbs)	QUANTITY Tantalum (Ta) LbTa Contained	Tantalum Ta	Carbon C	Oxygen O	D.C. Leakage (DCL) microamperes/ microfarad-volt	Capacitance CAP microfarad-volt per gram	Dissipation Factor (DF) maximum per anode
		Grade 1A											
528	Somerville, NJ	powder/High Cap. NRV Gr. 1A	248	6	Fansteel Met.	720.00	718.920	99.85	*	*	0.0075	2012	14
529	Somerville, NJ	powder/High Cap. NRV Gr. 1A	249	6	Fansteel Met.	700.00	699.020	99.86	*	*	0.0096	1948	19
530	Somerville, NJ	powder/High Cap. NRV Gr. 1A	250	6	Fansteel Met.	700.00	699.020	99.86	*	*	0.0011	2067	16
531	Somerville, NJ	powder/High Cap. NRV Gr. 1A	252	6	Fansteel Met.	690.00	688.965	99.85	*	*	0.0081	1917	12
532	Somerville, NJ	powder/High Cap. NRV Gr. 1A	254	4	Fansteel Met.	404.50	403.934	99.86	*	*	0.0087	1780	24
					Sub-Total	**3,214.500**	**3,209.859**						
		Grade 2											
533	Somerville, NJ	powder/Low Cap. Grade 2	010	4	Kennametal	480.00	479.328	99.86	0.006	0.09	0.0024	*	*
534	Somerville, NJ	powder/Low Cap. Grade 2	011	4	Kennametal	480.00	479.280	99.85	0.008	0.10	0.0022	1220	3
535	Somerville, NJ	powder/Low Cap. Grade 2	012	4	Kennametal	480.00	479.328	99.86	0.007	0.09	0.0018	1200	3
536	Somerville, NJ	powder/Low Cap. Grade 2	019	4	Kennametal	480.00	479.280	99.85	0.005	0.10	0.0018	1160	4
537	Somerville, NJ	powder/Low Cap. Grade 2	020	4	Kennametal	480.00	479.328	99.86	0.007	0.09	0.0019	1110	5
538	Somerville, NJ	powder/Low Cap. Grade 2	021	4	Kennametal	480.00	479.376	99.87	0.006	0.08	0.0015	1080	4
539	Somerville, NJ	powder/Low Cap. Grade 2	022	4	Kennametal	480.00	479.376	99.87	0.007	0.08	0.0033	*	*
540	Somerville, NJ	powder/Low Cap. Grade 2	023	4	Kennametal	480.00	479.328	99.86	0.006	0.09	0.0025	1240	4
541	Somerville, NJ	powder/Low Cap. Grade 2	024	4	Kennametal	480.00	479.328	99.86	0.006	0.09	0.0020	1090	3
542	Somerville, NJ	powder/Low Cap. Grade 2	025	4	Kennametal	480.00	479.280	99.85	0.007	0.10	0.0020	1090	3
543	Somerville, NJ	powder/Low Cap. Grade 2	026	4	Kennametal	480.00	479.328	99.86	0.006	0.09	0.0018	1210	4
544	Somerville, NJ	powder/Low Cap. Grade 2	028	4	Kennametal	480.00	479.376	99.87	0.005	0.08	0.0024	1090	3
					Sub-Total	**5,760.00**	**5,751.936**						

NOTES *The chemical percentages are not available.

The analysis results included in the Subsection J.1 are for ***informational purpose onl*** y. See Subsection A.4., paragraph b.

C. Tantalum Metal, Capacitor Grade

ITEM NO.	STORAGE LOCATION	FORM/ GRADE	LOT NUMBER	NO. OF BOXES	PRODUCER	QUANTITY Tantalum (Ta) Net Wt. (lbs)	QUANTITY Tantalum (Ta) LbTa Contained	Tantalum Ta	Carbon C	Oxygen O	D.C. Leakage (DCL) microamperes/	Capacitance CAP microfarad-volt	Dissipation Factor (DF) maximum per anode
		Grade 3											
545	Somerville, NJ	powder/High Cap. NRV Gr. 3	053	5	Fansteel Met.	490.00	489.363	99.87	*	*	0.0094	1571	5
546	Somerville, NJ	powder/High Cap. NRV Gr. 3	054	5	Fansteel Met.	570.00	569.316	99.88	*	*	0.0012	1547	6
547	Somerville, NJ	powder/High Cap. NRV Gr. 3	055	5	Fansteel Met.	510.00	506.838	99.38	*	*	0.0050	1567	5
548	Somerville, NJ	powder/High Cap. NRV Gr. 3	056	5	Fansteel Met.	490.00	489.412	99.88	*	*	0.0062	1562	4
549	Somerville, NJ	powder/High Cap. NRV Gr. 3	058	7	Fansteel Met.	750.00	748.950	99.86	*	*	*	*	*
550	Somerville, NJ	powder/High Cap. NRV Gr. 3	059	5	Fansteel Met.	510.00	508.980	99.80	*	*	*	*	*
551	Somerville, NJ	powder/High Cap. NRV Gr. 3	063	5	Fansteel Met.	560.00	559.272	99.87	*	*	0.0010	1630	8
552	Somerville, NJ	powder/High Cap. NRV Gr. 3	064	6	Fansteel Met.	700.00	699.160	99.88	*	*	0.0010	1512	4
553	Somerville, NJ	powder/High Cap. NRV Gr. 3	065	4	Fansteel Met.	430.00	429.441	99.87	*	*	0.0072	1452	4
554	Somerville, NJ	powder/High Cap. NRV Gr. 3	066	7	Fansteel Met.	750.00	749.025	99.87	*	*	0.0093	1494	5
555	Somerville, NJ	powder/High Cap. NRV Gr. 3	067	4	Fansteel Met.	480.00	479.424	99.88	*	*	0.0011	1528	2
556	Somerville, NJ	powder/High Cap. NRV Gr. 3	068	5	Fansteel Met.	570.00	569.259	99.87	*	*	0.0115	1724	5
557	Somerville, NJ	powder/High Cap. NRV Gr. 3	097	7	Fansteel Met.	740.00	739.186	99.89	*	*	0.0009	1504	8
558	Somerville, NJ	powder/High Cap. NRV Gr. 3	099	5	Fansteel Met.	510.00	509.439	99.89	*	*	0.0010	1497	11
559	Somerville, NJ	powder/High Cap. NRV Gr. 3	100	4	Fansteel Met.	480.00	479.472	99.89	*	*	0.0011	1463	11
560	Somerville, NJ	powder/High Cap. NRV Gr. 3	101	7	Fansteel Met.	750.00	749.175	99.89	*	*	0.0107	1563	14
561	Somerville, NJ	powder/High Cap. NRV Gr. 3	106	6	Fansteel Met.	720.00	719.136	99.88	*	*	0.0012	1561	8
					Sub-Total	**10,010.00**	**9,994.848**						
		Grade 4											
562	Somerville, NJ	powder/ Very High Cap/Gr. 4	406	5	Fansteel Met.	520.00	519.220	99.85	*	*	0.0016	2980	15
563	Somerville, NJ	powder/ Very High Cap/Gr. 4	408	7	Fansteel Met.	740.00	738.890	99.85	*	*	0.0029	3002	14
564	Somerville, NJ	powder/ Very High Cap/Gr. 4	409	5	Fansteel Met.	560.00	559.160	99.85	*	*	0.0036	2666	11
565	Somerville, NJ	powder/ Very High Cap/Gr. 4	410	6	Fansteel Met.	620.00	619.070	99.85	*	*	0.0037	2665	12
					Sub-Total	**2,440.00**	**2,436.340**						

NOTES *The chemical percentages are not available.

The analysis results included in the Subsection J.1 are for ***informational purpose only***. See Subsection A.4., paragraph b.

C. Tantalum Metal, Capacitor Grade

ITEM NO.	STORAGE LOCATION	FORM/ GRADE	LOT NUMBER	NO. OF BOXES	PRODUCER	QUANTITY Tantalum (Ta) Net Wt. (lbs)	QUANTITY Tantalum (Ta) LbTa Contained	Tantalum Ta	Carbon C	Oxygen O	D.C. Leakage (DCL) microamperes/ microfarad-volt	Capacitance CAP microfarad-volt per gram	Dissipation Factor (DF) maximum per anode
		Grade 5											
566	Somerville, NJ	powder/ Extra High Cap/Gr. 5	501	7	Fansteel Met.	740.00	738.890	99.85	*	*	0.0032	3818	18
567	Somerville, NJ	powder/ Extra High Cap/Gr. 5	504	5	Fansteel Met.	540.00	539.190	99.85	*	*	0.0023	3758	13
568	Somerville, NJ	powder/ Extra High Cap/Gr. 5	505	5	Fansteel Met.	580.00	579.188	99.86	*	*	0.0022	3760	13
569	Somerville, NJ	powder/ Extra High Cap/Gr. 5	508	6	Fansteel Met.	650.00	649.090	99.86	*	*	0.0098	3500	17
570	Somerville, NJ	powder/ Extra High Cap/Gr. 5	521	4	Fansteel Met.	470.00	469.342	99.86	*	*	0.0024	3795	18
					Sub-Total	**2,980.00**	**2,975.700**						
		Ingots/Grade 6											
571	Somerville, NJ	Ingots/Grade 6	012	2	Kennametal	970.00	969.224	99.92	0.007	0.017	*	*	*
572	Somerville, NJ	Ingots/Grade 6	016	3	Kennametal	1,354.00	1,343.845	99.25	0.006	0.017	*	*	*
573	Somerville, NJ	Ingots/Grade 6	017	4	Kennametal	1,470.00	1,468.677	99.91	0.007	0.017	*	*	*
574	Somerville, NJ	Ingots/Grade 6	018	3	Kennametal	1,272.00	1,270.982	99.92	0.006	0.016	*	*	*
575	Somerville, NJ	Ingots/Grade 6	021	2	Kennametal	781.00	780.375	99.92	0.006	0.016	*	*	*
					Sub-Total	**5,847.00**	**5,833.104**						
		Slabs/Grade 7											
576	Somerville, NJ	Slabs/Grade 7 Size 2x7x22 1/2	007	3	Fansteel Met.	1,172.00	1,171.766	99.98	*	*	*	*	*
577	Somerville, NJ	Slabs/Grade 7 Size 2x7x22 1/2	011	3	Fansteel Met.	1,068.00	1,067.786	99.98	*	*	*	*	*
578	Somerville, NJ	Slabs/Grade 7 Size 2x7x22 1/2	014	5	Fansteel Met.	1,332.00	1,331.734	99.98	*	*	*	*	*
579	Somerville, NJ	Slabs/Grade 7 Size 2x7x22 1/2	012	3	Fansteel Met.	1,068.00	1,067.786	99.98	*	*	*	*	*
580	Somerville, NJ	Slabs/Grade 7 Size 2x7x22 1/2	013	3	Fansteel Met.	1,049.00	1,048.790	99.98	*	*	*	*	*
					Sub-Total	**5,689.00**	**5,687.862**						
		Samples											
581	Somerville, NJ	Sintered Tantalum Pellets	000	1 Drum		134.00							
					Sub-Total	**134.00**							

NOTES *The chemical percentages are not available.
The analysis results included in the Subsection J.1 are for ***informational purpose onl*** y. See Subsection A.4., paragraph b.

C. Tantalum Metal, Capacitor Grade

ITEM NO.	STORAGE LOCATION	FORM/ GRADE	LOT NUMBER	NO. OF BOXES	PRODUCER	QUANTITY Tantalum (Ta) Net Wt. (lbs)	QUANTITY Tantalum (Ta) LbTa Contained	Tantalum Ta	Carbon C	Oxygen O	D.C. Leakage (DCL) microamperes/ microfarad-volt	Capacitance CAP microfarad-volt per gram	Dissipation Factor (DF) maximum per anode
		Ingots/Grade 6											
582	Baton Rouge, LA	Ingots/Grade 6	019	3	Kennametal	1,240.00	1,239.132	99.93	0.006	0.017	*	*	*
583	Baton Rouge, LA	Ingots/Grade 6	020	3	Kennametal	1,197.00	1,196.042	99.92	0.007	0.018	*	*	*
					Sub-Total	**2,437.00**	**2,435.174**						
		Slabs/Grade 7											
584	Baton Rouge, LA	Slabs/Grade 7 Size 2x7x22 1/2	009	3	Fansteel Met	1,240.75	1,240.502	99.98	*	*	*	*	*
585	Baton Rouge, LA	Slabs/Grade 7 Size 2x7x22 1/2	016	4	Fansteel Met	927.25	927.065	99.98	*	*	*	*	*
					Sub-Total	**2,168.00**	**2,167.566**						
					Grand Total	**40,679.500**	**40,492.389**						

NOTES *The chemical percentages are not available.
The analysis results included in the Subsection J.1 are for ***informational purpose onl*** y. See Subsection A.4., paragraph b.

D. Tantalum Oxide

ITEM NO.	STORAGE LOCATION	NO. OF DRUMS	QUANTITY Tantalum Oxide NET WT. (LBS.)	LOT NO.	% BY WEIGHT Ta_2O_5	Cb	Al	Ca	Cr	Fe	Mn	Mg	Mo	Ni	Si	Na	Sn	Ti	W	Zr	Th	U	Th+U	LOI
1	New Haven, IN	82	25,010.00	1	99.87	<0.01	0.001	<0.001	0.0048	0.005	0.001	<0.001	<0.002	0.0019	0.007	0.0005	<0.0015	<0.004	<0.005	<0.002	<0.01	<0.01	<0.02	0.05
2	New Haven, IN	82	25,010.00	2	99.68	<0.01	0.002	<0.001	0.002	0.004	<0.001	<0.001	<0.002	0.002	0.022	<0.001	<0.001	<0.002	<0.005	<0.002	<0.01	<0.01	<0.02	0.22
3	New Haven, IN	82	25,010.00	3	99.83	<0.01	0.002	<0.001	0.002	0.002	0.001	<0.001	<0.002	<0.002	<0.01	<0.001	<0.001	<0.002	<0.005	<0.002	<0.01	<0.01	<0.02	0.09

ITEM NO.	STORAGE LOCATION	NO. OF DRUMS	QUANTITY Tantalum Oxide NET WT. (LBS.)	LOT NO.	% BY WEIGHT Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	Th+U
4	New Haven, IN	82	25,010.00	1(DLA300-91-C-0017)	99.67	0.03	0.01	<0.01	<0.01	0.001	0.001	0.002
5	New Haven, IN	82	25,010.00	2(DLA300-91-C-0017)	99.91	0.04	0.01	<0.01	<0.01	0.001	0.001	0.002
6	New Haven, IN	82	25,010.00	3(DLA300-91-C-0017)	99.91	0.01	<0.01	<0.01	<0.01	0.001	0.001	0.002
7	New Haven, IN	82	25,010.00	4(DLA300-91-C-0017)	99.90	<0.01	<0.01	<0.01	<0.01	0.001	0.001	0.002
8	New Haven, IN	100	9,196.00	S-1048	99.53	0.02	<0.01	0.07	<0.01	0.001	0.001	0.002
9	New Haven, IN	50	4,980.00	S-1048-New York	99.40	0.07	<0.01	0.12	<0.01	0.001	0.001	0.002
10	New Haven, IN	50	5,031.50	S-1138G	99.74	0.06	<0.01	0.11	<0.01	0.001	0.001	0.002
11	New Haven, IN	60	6,020.00	S-1138/F	99.73	0.02	<0.01	0.10	<0.01	0.001	0.001	0.002
12	New Haven, IN	50	5,007.00	S-992-2	99.66	0.15	<0.01	0.12	<0.01	0.001	0.001	0.002
13	New Haven, IN	50	5,004.00	S-992-3	99.60	0.09	<0.01	0.13	<0.01	0.001	0.001	0.002
14	New Haven, IN	50	5,012.00	P-902-1	99.66	0.15	<0.01	0.09	<0.01	0.001	0.001	0.002
15	New Haven, IN	50	5,014.00	P-902-2	99.57	0.19	<0.01	0.15	<0.01	0.001	0.001	0.002
16	New Haven, IN	50	5,020.00	S-1138-1	99.75	<0.01	<0.01	0.13	<0.01	0.001	0.001	0.002
17	New Haven, IN	50	5,004.00	S-1138-2	99.69	0.08	<0.01	0.14	<0.01	0.001	0.001	0.002
18	New Haven, IN	50	5,020.00	S-1138-3	99.66	0.14	<0.01	0.11	<0.01	0.001	0.001	0.002
19	New Haven, IN	100	10,005.00	S-1138-4	99.79	0.03	<0.01	0.08	<0.01	0.001	0.001	0.002
20	New Haven, IN	100	10,017.00	S-1138-5	99.82	0.03	<0.01	0.08	<0.01	0.001	0.001	0.002
21	New Haven, IN	20	2,000.00	M New York-120	99.25	0.16	<0.01	0.17	<0.01	0.002	0.001	0.003
22	New Haven, IN	5	13,352.00	MGK-199	85.80	2.26	0.06	1.72	<0.01	0.001	0.001	0.002
			270,752.50									

Elements:	
Ta_2O_5	Tantalum Pentoxide
Cb	Columbium
Al	Aluminum
Ca	Calcium
Cr	Chromium
Fe	Iron
Mn	Manganese
Mg	Magnesium

Elements:	
Mo	Molybdenum
Ni	Nickel
Si	Silicon
Na	Sodium
Sn	Tin
Ti	Titanium
W	Tungsten
Zr	Zirconium

Elements:	
Th	Thorium
U	Uranium
Th+U	Thorium+Uranium
LOI	Loss on Ignition

NOTES: The analysis results included in the Subsection J.1 are for ***informational purpose only***. See Subsection A.2., paragraph b.

E. Tanatalum Columbium Concentrates

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
37	Binghamton, NY	GS-OOP-163-SCM	DMS-99	50	Belgian Congo	33.62	42.51	0.95	0.95	<0.01	0.002	0.057	**0.059**	*15.1*	19,823.00	5,890.6	5,458.0	6,664.5	8,426.8
38	Binghamton, NY	GS-OOP-3894-SCM-13	014	25	Portugal	30.44	32.93	4.06	4.26	<0.01	0.044	0.097	**0.141**	*29.1*	10,989.00	2,529.6	2,739.5	3,345.1	3,618.7
39	Binghamton, NY	GS-OOP-3894-SCM-14	015	17	Portugal	29.74	31.70	5.88	4.42	<0.01	0.049	0.092	**0.141**	*28.2*	5,521.00	1,223.4	1,344.7	1,641.9	1,750.2
40	Binghamton, NY	GS-OOP-3904-SCM-13	004	69	Belgian Congo	30.90	36.78	1.36	5.44	<0.01	0.011	0.048	**0.059**	*13.5*	21,967.00	5,647.9	5,558.9	6,787.8	8,079.5
41	Binghamton, NY	GS-OOP-3904-SCM-13	05C	46	Belgian Congo	38.56	40.28	0.50	0.86	<0.01	0.004	0.092	**0.096**	*24.5*	15,022.00	4,229.8	4,743.8	5,792.5	6,050.9
42	Binghamton, NY	GS-OOP-3904-SCM-79	079	21	Belgian Congo	37.40	36.40	2.66	0.62	<0.01	0.011	0.072	**0.083**	*19.8*	5,943.00	1,512.2	1,820.3	2,222.7	2,163.3
43	Binghamton, NY	GS-OOP-3904-SCM-85	085	29	Belgian Congo	35.56	41.82	0.90	0.73	<0.01	0.018	0.157	**0.175**	*42.7*	7,729.00	2,259.5	2,250.9	2,748.4	3,232.3
44	Binghamton, NY	GS-OOP-3904-SCM-20	09M	67	Belgian Congo	33.16	38.33	4.01	2.06	<0.01	0.021	0.059	**0.080**	*17.2*	21,809.00	5,843.5	5,922.6	7,231.9	8,359.4
45	Binghamton, NY	GS-OOP-3904-SCM-10	10M	20	Belgian Congo	26.10	50.44	0.50	1.26	<0.01	0.006	0.078	**0.084**	*21.0*	6,648.00	2,344.1	1,421.0	1,735.1	3,353.3
46	Binghamton, NY	GS-OOP-3904-SCM-20	11M	67	Belgian Congo	35.09	39.83	3.76	0.92	<0.01	0.006	0.060	**0.066**	*16.3*	21,827.00	6,077.2	6,272.5	7,659.1	8,693.7
47	Binghamton, NY	GS-OOP-3904-SCM-25	12M	100	Belgian Congo	34.90	38.72	4.77	1.32	<0.01	0.003	0.055	**0.058**	*14.7*	32,958.00	8,920.7	9,420.0	11,502.3	12,761.3
48	Binghamton, NY	GS-OOP-3904-SCM-20	13M	50	Belgian Congo	30.42	34.96	5.70	2.53	<0.01	0.024	0.130	**0.154**	*36.1*	17,592.00	4,299.2	4,382.7	5,351.5	6,150.2
49	Binghamton, NY	GS-OOP-3904-SCM-20	14M	67	Belgian Congo	31.49	41.08	2.38	2.78	<0.01	0.004	0.048	**0.052**	*12.9*	21,982.00	6,312.5	5,668.9	6,922.1	9,030.2
50	Binghamton, NY	GS-OOP-3904-SCM-14-A	15A	16	Belgian Congo	27.18	46.22	1.04	0.74	<0.01	0.017	0.090	**0.107**	*25.0*	4,383.00	1,416.1	975.6	1,191.3	2,025.8
51	Binghamton, NY	GS-OOP-3904-SCM-14-A	15B	29	Belgian Congo	32.67	40.14	0.83	1.83	<0.01	0.019	0.039	**0.058**	*11.8*	8,179.00	2,295.0	2,188.3	2,672.1	3,283.1
52	Binghamton, NY	GS-OOP-3904-SCM-20	15M	27	Belgian Congo	36.88	40.22	0.08	2.58	<0.01	0.029	0.039	**0.068**	*12.6*	8,988.00	2,527.0	2,714.7	3,314.8	3,615.0
53	Binghamton, NY	GS-OOP-3904-SCM-27	21H	11	Belgian Congo	34.14	41.22	1.55	0.81	<0.01	0.028	0.069	**0.097**	*20.4*	3,025.00	871.6	845.8	1,032.7	1,246.9
54	Binghamton, NY	GS-OOP-3904-SCM-23	22M	67	Belgian Congo	32.86	40.08	1.98	3.06	<0.01	0.007	0.050	**0.057**	*13.7*	22,081.00	6,186.5	5,942.2	7,255.8	8,850.1
55	Binghamton, NY	GS-OOP-3904-SCM-25	23M	9	Belgian Congo	40.20	39.43	0.07	1.14	<0.01	0.019	0.039	**0.058**	*11.8*	2,830.00	780.0	931.7	1,137.7	1,115.9
56	Binghamton, NY	GS-OOP-3904-SCM-26	24M	67	Belgian Congo	35.75	38.32	2.40	2.38	<0.01	0.004	0.054	**0.058**	*14.5*	22,173.00	5,939.5	6,491.8	7,926.8	8,496.7
57	Binghamton, NY	GS-OOP-3904-SCM-26	25M	25	Belgian Congo	30.35	47.29	0.58	0.93	<0.01	0.004	0.095	**0.099**	*25.3*	8,317.00	2,749.4	2,067.2	2,524.2	3,933.1
58	Binghamton, NY	GS-OOP-3904-SCM-68	62M	28	Belgian Congo	27.53	30.90	5.51	6.83	<0.01	0.067	0.050	**0.117**	*18.6*	22,475.00	4,854.7	5,067.2	6,187.4	6,944.8
59	Binghamton, NY	GS-OOP-3904-SCM-72	65M	28	Belgian Congo	33.48	38.78	2.83	1.22	<0.01	0.021	0.061	**0.082**	*17.7*	22,323.00	6,051.5	6,120.7	7,473.7	8,656.9
60	Binghamton, NY	GS-OOP-3904-SCM-66	66H	29	Belgian Congo	29.14	51.06	0.22	0.26	<0.01	0.008	0.065	**0.073**	*17.7*	7,988.00	2,851.2	1,906.3	2,327.7	4,078.7
61	Binghamton, NY	GS-OOP-3904-SCM-66	67H	49	Belgian Congo	37.20	38.70	1.31	0.71	<0.01	0.018	0.066	**0.084**	*18.8*	13,499.00	3,651.9	4,112.5	5,021.6	5,224.1
62	Binghamton, NY	GS-OOP-3904-SCM-72	67M	17	Belgian Congo	32.44	40.92	0.96	1.70	<0.01	0.020	0.153	**0.173**	*41.8*	13,627.00	3,898.0	3,620.3	4,420.6	5,576.2
63	Binghamton, NY	GS-OOP-3904-SCM-69	70H	17	Belgian Congo	29.03	45.86	0.70	0.52	<0.01	0.007	0.049	**0.056**	*13.4*	14,327.00	4,592.9	3,406.2	4,159.1	6,570.4
64	Binghamton, NY	GS-OOP-3904-SCM-74	70M	28	Belgian Congo	30.79	34.68	1.73	2.90	<0.01	0.027	0.054	**0.081**	*16.4*	21,966.00	5,325.2	5,538.9	6,763.3	7,617.8
65	Binghamton, NY	GS-OOP-3904-SCM-71	73H	11	Belgian Congo	36.38	39.84	0.72	1.08	<0.01	0.015	0.060	**0.075**	*17.0*	9,187.00	2,558.6	2,737.2	3,342.2	3,660.1
66	Binghamton, NY	GS-OOP-3904-SCM-71	74H	11	Belgian Congo	27.82	46.23	0.60	0.53	<0.01	0.010	0.053	**0.063**	*14.7*	9,112.00	2,944.7	2,076.0	2,535.0	4,212.5
67	Binghamton, NY	GS-OOP-3904-SCM-78	74M	42	Belgian Congo	32.46	37.10	2.18	1.74	<0.01	0.049	0.060	**0.109**	*19.8*	22,164.00	5,748.1	5,892.0	7,194.4	8,222.8
68	Binghamton, NY	GS-OOP-3904-SCM-78	75M	67	Belgian Congo	32.72	37.30	2.28	2.40	<0.01	0.068	0.061	**0.129**	*21.6*	22,149.00	5,775.2	5,935.1	7,247.2	8,261.6
69	Binghamton, NY	GS-OOP-3904-SCM-78	76M	8	Belgian Congo	33.18	44.62	0.31	1.66	<0.01	0.028	0.194	**0.222**	*53.2*	2,656.00	828.4	721.7	881.3	1,185.1
70	Binghamton, NY	GS-OOP-3904-SCM-81	78M	46	Belgian Congo	35.90	41.16	0.75	0.93	<0.01	0.017	0.153	**0.170**	*41.6*	12,525.00	3,603.8	3,682.4	4,496.5	5,155.3
71	Binghamton, NY	GS-OOP-3904-SCM-81	79M	65	Belgian Congo	29.29	34.83	2.30	4.24	<0.01	0.123	0.060	**0.183**	*25.8*	21,444.00	5,221.1	5,143.8	6,280.9	7,468.9
72	Binghamton, NY	GS-OOP-3904-SCM-83	80M	57	Belgian Congo	35.22	42.20	0.53	1.84	<0.01	0.025	0.141	**0.166**	*39.1*	18,863.00	5,564.5	5,440.8	6,643.5	7,960.2
73	Binghamton, NY	GS-OOP-3904-SCM-83	81M	17	Belgian Congo	34.62	42.59	0.18	2.01	<0.01	0.037	0.274	**0.311**	***75.0***	5,619.00	1,672.9	1,593.1	1,945.3	2,393.1
74	Binghamton, NY	GS-OOP-3904-SCM-80	82H	36	Belgian Congo	26.62	47.15	0.60	0.72	<0.01	0.012	0.057	**0.069**	*16.0*	10,098.00	3,328.3	2,201.4	2,688.1	4,761.2
75	Binghamton, NY	GS-OOP-3904-SCM-83	82M	79	Belgian Congo	32.61	38.94	1.42	2.42	<0.01	0.021	0.059	**0.080**	*17.2*	23,507.00	6,398.8	6,277.8	7,665.6	9,153.6
76	Binghamton, NY	GS-OOP-3904-SCM-80	83H	19	Belgian Congo	28.17	44.70	0.84	0.78	<0.01	0.006	0.072	**0.078**	*19.4*	5,434.00	1,698.0	1,253.6	1,530.8	2,429.0
77	Binghamton, NY	GS-OOP-3904-SCM-84	87H	21	Belgian Congo	26.26	48.88	0.65	0.50	<0.01	0.007	0.050	**0.057**	*13.7*	5,966.00	2,038.5	1,283.0	1,566.7	2,916.2
78	Binghamton, NY	GS-OOP-3904-SCM-83	87M	40	Belgian Congo	35.47	41.60	0.15	2.08	<0.01	0.046	0.228	**0.274**	*63.6*	13,218.00	3,843.8	3,839.6	4,688.4	5,498.7
79	Binghamton, NY	GS-OOP-3904-SCM-84	89A	8	Belgian Congo	31.98	42.63	0.84	0.62	<0.01	0.005	0.048	**0.053**	*13.0*	2,132.00	635.3	558.4	681.8	908.9
80	Binghamton, NY	GS-OOP-3904-SCM-84	90H	50	Belgian Congo	31.82	42.36	0.80	1.05	<0.01	0.012	0.053	**0.065**	*14.9*	14,100.00	4,175.2	3,674.4	4,486.6	5,972.8
81	Binghamton, NY	GS-OOP-3904-SCM-90	90M	37	Belgian Congo	32.62	38.42	1.58	2.61	<0.01	0.023	0.061	**0.084**	*17.9*	11,163.00	2,998.1	2,982.1	3,641.4	4,288.8
82	Binghamton, NY	GS-OOP-3904-SCM-86	91A	45	Belgian Congo	27.22	46.74	0.78	0.62	<0.01	0.006	0.057	**0.063**	*15.5*	12,598.00	4,116.2	2,808.4	3,429.2	5,888.3
83	Binghamton, NY	GS-OOP-3904-SCM-91	93M	24	Belgian Congo	36.14	42.08	0.87	0.88	<0.01	0.016	0.165	**0.181**	*44.6*	7,907.00	2,325.9	2,340.3	2,857.6	3,327.3
84	Binghamton, NY	GS-OOP-3904-SCM-23	18MA	19	Belgian Congo	37.42	38.13	0.80	1.20	<0.01	0.006	0.083	**0.089**	*22.3*	6,382.00	1,701.1	1,955.8	2,388.1	2,433.5
85	Binghamton, NY	GS-OOP-3904-SCM-23	19AM	7	Belgian Congo	31.54	44.82	0.65	1.34	<0.01	0.013	0.074	**0.087**	*20.5*	2,299.00	720.3	593.8	725.1	1,030.4
86	Binghamton, NY	GS-OOP-3904-SCM-23	20DM	7	Belgian Congo	33.67	40.09	0.08	4.14	<0.01	0.035	0.041	**0.076**	*13.6*	2,166.00	607.0	597.3	729.3	868.3
87	Binghamton, NY	GS-OOP-3904-SCM-70	72HA	3	Belgian Congo	32.14	43.17	0.65	0.53	<0.01	0.003	0.047	**0.050**	*12.6*	2,520.00	760.5	663.3	809.9	1,087.9
88	Binghamton, NY	GS-OOP-3904-SCM-80	85BH	15	Belgian Congo	26.70	46.62	0.73	0.57	<0.01	0.006	0.053	**0.059**	*14.4*	4,175.00	1,360.6	912.9	1,114.7	1,946.4
89	Binghamton, NY	GS-OOP-3904-SCM-80	85DH	31	Belgian Congo	34.28	44.19	1.32	0.42	<0.01	0.002	0.056	**0.058**	*14.9*	8,648.00	2,671.4	2,427.8	2,964.5	3,821.6
90	Binghamton, NY	GS-OOP-10114-SCM-1F	236	24	Belgian Congo	30.67	38.22	2.04	1.26	<0.01	0.042	0.058	**0.100**	*18.7*	8,382.00	2,239.4	2,105.3	2,570.8	3,203.6
91	Binghamton, NY	GS-OOP-10210-SCM-1F	6178	48	Unknown	24.89	31.11	2.55	8.18	<0.01	0.027	0.063	**0.090**	*18.7*	15,396.00	3,348.2	3,138.3	3,832.1	4,789.7
92	Binghamton, NY	GS-OOP-10225-SCM-1	G&H	8	Belgian Congo	30.88	40.98	7.91	0.62	<0.01	0.002	0.058	**0.060**	*15.4*	2,473.00	708.4	625.4	763.7	1,013.4
93	Binghamton, NY	GS-OOP-10225-SCM-1	080	13	Belgian Congo	26.18	42.01	4.08	4.24	<0.01	0.104	0.231	**0.335**	*69.1*	4,373.00	1,284.2	937.6	1,144.9	1,837.1
94	Binghamton, NY	SCM-TS-25197	DMS76A	78	Belgian Congo	35.83	37.82	1.24	1.16	<0.01	0.003	0.054	**0.057**	*14.4*	31,153.00	8,236.1	9,141.3	11,162.1	11,782.1
															723,800.00	**200,193.2**	**192,473.2**	**235,021.5**	**286,383.0**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 2 - Tantalum Minerals More Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
95	Binghamton, NY	SCM-TS-25197	DMS76B	42	Belgian Congo	38.34	40.14	0.76	0.64	<0.01	0.002	0.054	**0.056**	*14.3*	16,541.00	4,641.3	5,193.7	6,341.8	6,639.6
96	Binghamton, NY	SCM-TS-25197	DMS-089	39	Belgian Congo	36.89	38.32	1.40	0.90	<0.01	0.003	0.062	**0.065**	*16.5*	15,678.00	4,199.7	4,736.5	5,783.6	6,007.8
97	Binghamton, NY	GS-OOP26386-SCM	001	2	Belgian Congo	31.43	38.02	2.04	5.12	<0.01	0.002	0.125	**0.127**	*33.0*	2,892.00	768.6	744.4	909.0	1,099.5
98	Binghamton, NY	GS-OOP-287-SCM	DMS-108	27	Unknown	36.61	39.90	1.12	0.64	<0.01	0.003	0.050	**0.053**	*13.4*	10,556.00	2,944.2	3,164.9	3,864.6	4,211.8
99	Binghamton, NY	GS-OOP-3904-SCM-13	05B	42	Belgian Congo	38.82	39.56	1.77	0.08	<0.01	0.029	0.036	**0.065**	*11.8*	13,692.00	3,786.4	4,353.0	5,315.2	5,416.6
100	Binghamton, NY	GS-OOP-3904-SCM-15	16H	8	Belgian Congo	51.01	22.46	0.73	1.42	<0.01	0.009	0.052	**0.061**	*14.4*	2,859.00	448.9	1,194.4	1,458.4	642.1
101	Binghamton, NY	GS-OOP-3904-SCM-20	16M	13	Belgian Congo	38.50	37.55	0.08	2.90	<0.01	0.026	0.034	**0.060**	*11.0*	4,231.00	1,110.6	1,334.0	1,628.9	1,588.7
102	Binghamton, NY	GS-OOP-3904-SCM-19	18H	26	Belgian Congo	45.20	30.22	2.07	0.64	<0.01	0.004	0.058	**0.062**	*15.6*	8,894.00	1,878.9	3,292.3	4,020.1	2,687.8
103	Binghamton, NY	GS-OOP-3904-SCM-67	69H	16	Belgian Congo	45.70	32.48	0.90	0.44	<0.01	0.004	0.052	**0.056**	*14.0*	5,694.00	1,292.8	2,131.1	2,602.2	1,849.4
104	Binghamton, NY	GS-OOP-3904-SCM-75	78H	21	Belgian Congo	49.03	31.13	0.72	0.29	<0.01	0.002	0.049	**0.051**	*13.0*	7,252.00	1,578.1	2,911.9	3,555.7	2,257.5
105	Binghamton, NY	GS-OOP-3904-SCM-23	20AM	16	Belgian Congo	30.27	48.16	0.61	0.80	<0.01	0.004	0.093	**0.097**	*24.8*	5,412.00	1,822.0	1,341.6	1,638.2	2,606.4
106	Binghamton, NY	GS-OOP-3904-SCM-23	20BM	27	Belgian Congo	40.92	37.10	0.12	1.84	<0.01	0.014	0.041	**0.055**	*11.9*	8,992.00	2,332.0	3,013.4	3,679.5	3,336.0
107	Binghamton, NY	GS-OOP-3904-SCM-86	92AH	22	Belgian Congo	51.18	29.20	0.82	0.18	<0.01	0.002	0.052	**0.054**	*13.8*	7,390.00	1,508.4	3,097.5	3,782.2	2,157.9
108	Binghamton, NY	GS-OOP-3904-SCM-86	92BH	7	Belgian Congo	49.26	24.94	2.51	0.47	<0.01	0.006	0.048	**0.054**	*13.1*	2,999.00	522.8	1,209.9	1,477.3	748.0
109	Binghamton, NY	GS-009-10132-SCM-1F	237	21	Unknown	39.59	33.84	1.56	0.90	<0.01	0.015	0.048	**0.063**	*13.8*	7,114.00	1,682.9	2,306.5	2,816.4	2,407.4
110	Binghamton, NY	GS-OOP-10225-SCM-1	074	5	Belgian Congo	42.54	29.52	4.14	2.39	<0.01	0.032	0.132	**0.164**	*37.3*	2,182.00	450.3	760.2	928.2	644.1
111	Binghamton, NY	GS-OOP-10714-SCM	106	12	Belgian Congo	45.95	34.85	0.16	0.74	<0.01	0.021	0.029	**0.050**	*9.0*	3,909.00	952.3	1,471.0	1,796.2	1,362.3
112	Binghamton, NY	GS-OOP-10714-SCM	115	14	Belgian Congo	48.32	25.20	0.73	1.14	<0.01	0.013	0.049	**0.062**	*13.9*	4,962.00	874.1	1,963.6	2,397.6	1,250.4
113	Binghamton, NY	GS-OOP-10714-SCM	125	13	Belgian Congo	52.32	28.05	0.64	0.56	<0.01	0.016	0.044	**0.060**	*12.9*	5,435.00	1,065.7	2,328.8	2,843.6	1,524.5
114	Binghamton, NY	GS-OOP-10714-SCM	173	16	Belgian Congo	57.53	19.70	1.86	1.88	<0.01	0.013	0.059	**0.072**	*16.6*	5,366.00	739.0	2,528.2	3,087.1	1,057.1
115	Binghamton, NY	GS-OOP-10714-SCM	209	15	Belgian Congo	49.42	25.65	1.34	0.75	<0.01	0.018	0.043	**0.061**	*12.8*	6,565.00	1,177.1	2,657.1	3,244.4	1,683.9
116	Binghamton, NY	GS-OOP-10714-SCM	225	9	Belgian Congo	42.93	28.45	1.02	1.36	<0.01	0.021	0.069	**0.090**	*19.8*	2,481.00	493.4	872.3	1,065.1	705.8
117	Binghamton, NY	GS-OOP-10714-SCM	235	7	Belgian Congo	58.12	18.97	1.06	0.81	<0.01	0.002	0.064	**0.066**	*17.0*	2,378.00	315.3	1,131.9	1,382.1	451.1
118	Binghamton, NY	GS-OOP-10225-SCM-1	075	7	Belgian Congo	33.48	35.20	9.02	2.08	0.01	0.097	0.172	**0.269**	*53.1*	2,181.00	536.7	598.0	730.2	767.7
119	Binghamton, NY	GS-OOP-10225-SCM-1	073	10	Belgian Congo	41.78	28.19	8.02	1.50	<0.01	0.038	0.111	**0.149**	*32.3*	4,369.00	861.0	1,494.9	1,825.4	1,231.6
120	Binghamton, NY	GS-OOP-3306-SCM-1F	1--63	21	South Africa	21.55	52.38	0.01	3.15	<0.01	0.050	0.401	**0.451**	***109.4***	7,053.00	2,582.5	1,244.8	1,519.9	3,694.4
121	Binghamton, NY	GS-OOP-3904-SCM-89	93HOB	14	Belgian Congo	35.07	40.38	1.25	0.57	<0.01	0.004	0.057	**0.061**	*15.3*	4,867.00	1,373.8	1,397.8	1,706.9	1,965.3
122	Binghamton, NY	GS-OOP-269-SCM-IF	DMS-102	143	Belgian Congo	35.76	39.74	1.08	1.12	<0.01	0.006	0.067	**0.073**	*18.1*	56,897.00	15,805.9	16,662.9	20,346.4	22,610.9
123	Binghamton, NY	GS-OOP-3150-SCM-1F	2322	10	China	11.30	59.32	1.48	4.49	<0.01	0.026	0.078	**0.104**	*22.6*	2,790.00	1,156.9	258.2	315.3	1,655.0
															231,631.00	**58,901.65**	**75,394.57**	**92,061.36**	**84,260.78**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 2 - Tantalum Minerals More Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
124	Binghamton, NY	GS-OOP-3904-SCM-86	92C	8	Belgian Congo	32.92	43.82	0.93	0.91	<0.01	0.003	0.037	0.040	*10.0*	2,749.00	842.1	741.1	905.0	1,204.6
125	Binghamton, NY	GS-OOP-647-SCM	115B	6	Belgian Congo	37.72	37.78	1.10	0.62	<0.01	0.002	0.020	0.022	*11.8*	2,374.00	627.0	733.4	895.5	896.9
126	Binghamton, NY	GS-OOP-3904-SCM-79	81HOB	5	Belgian Congo	64.08	11.52	0.83	0.41	<0.01	0.001	0.012	0.013	*3.2*	1,692.00	136.3	887.9	1,084.2	194.9
127	Binghamton, NY	GS-OOP-3904-SCM-84	88HOB	31	Belgian Congo	44.36	33.84	0.38	0.98	<0.01	0.004	0.015	0.019	*4.3*	10,785.00	2,551.2	3,918.1	4,784.2	3,649.6
128	Binghamton, NY	GS-OOP-3904-SCM-24	19H	8	Belgian Congo	65.04	9.72	1.98	0.36	<0.01	<0.001	0.009	0.009	*2.4*	2,844.00	193.2	1,514.9	1,849.7	276.4
129	Binghamton, NY	GS-OOP-3904-SCM-24	20H	13	Belgian Congo	67.96	9.96	1.44	0.36	<0.01	<0.001	0.009	0.009	*2.4*	4,603.00	320.5	2,561.9	3,128.2	458.5
130	Binghamton, NY	GS-OOP-3904-SCM-66	65H	10	Belgian Congo	48.02	24.38	0.90	0.44	<0.01	0.002	0.037	0.039	*9.9*	3,233.00	551.0	1,271.4	1,552.5	788.2
131	Binghamton, NY	GS-OOP-3904-SCM-66	68H	8	Belgian Congo	63.88	11.30	1.02	0.40	<0.01	<0.001	0.012	0.012	*3.2*	2,666.00	210.6	1,394.7	1,703.0	301.3
132	Binghamton, NY	GS-OOP-3904-SCM-70	71H	5	Belgian Congo	66.85	10.74	0.96	0.38	<0.01	<0.001	0.012	0.012	*3.2*	1,615.00	121.2	884.2	1,079.6	173.5
133	Binghamton, NY	GS-OOP-3904-SCM-73	77H	5	Belgian Congo	67.02	12.16	1.00	0.54	<0.01	0.002	0.013	0.015	*3.6*	1,796.00	152.7	985.8	1,203.7	218.4
134	Binghamton, NY	GS-OOP-3904-SCM-88	94H	4	Belgian Congo	64.98	10.78	0.92	0.44	<0.01	0.001	0.010	0.011	*2.7*	1,422.00	107.2	756.7	924.0	153.3
135	Binghamton, NY	GS-OOP-3904-88	95H	6	Belgian Congo	44.81	32.28	0.46	2.16	<0.01	0.006	0.017	0.023	*5.0*	2,166.00	488.8	794.9	970.6	699.2
136	Binghamton, NY	GS-OOP-3904-SCM-70	72HB	7	Belgian Congo	52.08	22.48	0.90	0.43	<0.01	0.004	0.023	0.027	*6.4*	2,341.00	367.9	998.5	1,219.2	526.3
137	Binghamton, NY	GS-OOP-10714-SCM	104	13	Belgian Congo	45.46	34.67	1.00	0.14	<0.01	0.009	0.034	0.043	*9.7*	4,377.00	1,060.8	1,629.6	1,989.8	1,517.5
138	Binghamton, NY	GS-OOP-10714-SCM	110	8	Belgian Congo	48.42	26.03	0.97	1.34	<0.01	0.008	0.014	0.022	*4.3*	2,216.00	403.2	878.7	1,073.0	576.8
139	Binghamton, NY	GS-OOP-10714-SCM	111	21	Belgian Congo	55.05	24.04	0.84	0.37	<0.01	0.002	0.029	0.031	*7.8*	7,370.00	1,238.5	3,322.7	4,057.2	1,771.7
140	Binghamton, NY	GS-OOP-10714-SCM	127	9	Belgian Congo	48.84	31.00	0.16	1.28	<0.01	0.018	0.025	0.043	*8.0*	2,840.00	615.4	1,135.9	1,387.1	880.4
141	Binghamton, NY	GS-OOP-10714-SCM	177	21	Belgian Congo	47.62	30.94	0.73	0.88	<0.01	0.002	0.013	0.015	*3.6*	7,281.00	1,574.8	2,839.5	3,467.2	2,252.7
142	Binghamton, NY	GS-OOP-10714-SCM	190	13	Belgian Congo	44.02	33.50	0.14	2.53	<0.01	0.010	0.031	0.041	*9.0*	4,073.00	953.8	1,468.3	1,792.9	1,364.5
143	Binghamton, NY	GS-OOP-10714-SCM	222	2	Belgian Congo	54.62	25.50	0.23	0.26	<0.01	<0.001	0.025	0.025	*6.6*	2,162.00	385.4	967.1	1,180.9	551.3
144	Binghamton, NY	SCM-TS-22213-NSP-1	27001	128	Unknown	27.73	26.18	0.06	5.61	<0.01	0.002	0.003	0.005	*1.0*	89,600.00	16,397.6	20,347.9	24,846.1	23,457.3
145	Binghamton, NY	SCM-TS-22213-NSP-1	27002	128	Unknown	29.75	26.26	0.11	6.42	<0.01	0.001	0.003	0.004	*0.9*	89,600.00	16,447.7	21,830.2	26,656.0	23,529.0
146	Binghamton, NY	SCM-TS-22213-NSP-1	27003	128	Unknown	29.12	26.86	0.08	6.00	<0.01	0.001	0.003	0.004	*0.9*	89,600.00	16,823.5	21,367.9	26,091.5	24,066.6
147	Binghamton, NY	SCM-TS-22213-NSP-1	27004	128	Unknown	29.60	26.92	0.10	6.19	<0.01	0.002	0.002	0.004	*0.7*	89,600.00	16,861.1	21,720.1	26,521.6	24,120.3
148	Binghamton, NY	SCM-TS-22213-NSP-1	27005	128	Unknown	30.20	27.26	0.12	6.15	<0.01	0.002	0.002	0.004	*0.7*	89,600.00	17,074.0	22,160.4	27,059.2	24,425.0
149	Binghamton, NY	SCM-TS-22213-NSP-1	27006	128	Unknown	32.46	28.15	0.11	5.98	<0.01	0.001	0.002	0.003	*0.6*	89,600.00	17,631.5	23,818.8	29,084.2	25,222.4
150	Binghamton, NY	SCM-TS-22213-NSP-1	27015	128	Unknown	29.73	27.36	0.10	6.54	<0.01	0.001	0.002	0.003	*0.6*	89,600.00	17,136.7	21,815.5	26,638.1	24,514.6
151	Binghamton, NY	SCM-TS-22213-NSP-1	27017	128	Unknown	29.86	27.90	0.12	6.40	<0.01	0.002	0.004	0.006	*1.2*	89,600.00	17,474.9	21,910.9	26,754.6	24,998.4
152	Binghamton, NY	SCM-TS-22213-NSP-1	27019	128	Unknown	30.94	28.80	0.10	6.30	<0.01	0.003	0.004	0.007	*1.3*	89,600.00	18,038.6	22,703.4	27,722.2	25,804.8
153	Binghamton, NY	SCM-TS-22213-NSP-1	27021	136	Unknown	30.32	27.62	0.12	6.52	<0.01	0.001	0.003	0.004	*0.9*	95,200.00	18,380.7	23,639.0	28,864.6	26,294.2
154	Binghamton, NY	SCM-TS-22213-NSP-1	27022	136	Unknown	30.40	27.28	0.10	6.60	<0.01	0.002	0.004	0.006	*1.2*	95,200.00	18,154.5	23,701.4	28,940.8	25,970.6
															1,067,405.00	**203,322.1**	**274,700.8**	**335,426.4**	**290,859.0**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 1 - Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
155	New Haven, IN	DLA300-90-C-0031	1	84	Unknown	35.52	31.54	4.82	3.08	0.01	0.046	0.060	**0.106**	*19.5*	42,000.00	9,260.0	12,217.6	14,918.4	13,246.8
156	New Haven, IN	DLA300-90-C-0031	2	84	Unknown	35.57	31.41	4.76	2.99	0.01	0.044	0.058	**0.102**	*18.8*	42,000.00	9,221.9	12,234.8	14,939.4	13,192.2
157	New Haven, IN	DLA300-90-C-0031	3	84	Unknown	44.71	15.96	4.72	1.28	<0.01	0.073	0.052	**0.125**	*19.6*	42,000.00	4,685.8	15,378.6	18,778.2	6,703.2
158	New Haven, IN	DLA300-90-C-0031	4	82	Unknown	31.49	29.71	5.49	5.08	0.01	0.117	0.151	**0.268**	*49.2*	42,000.00	8,722.8	10,831.4	13,225.8	12,478.2
159	New Haven, IN	DLA300-90-C-0031	5	84	Unknown	30.52	31.17	5.12	5.30	<0.01	0.126	0.162	**0.288**	*52.8*	42,000.00	9,151.4	10,497.8	12,818.4	13,091.4
160	New Haven, IN	DLA300-90-C-0031	6	84	Unknown	31.73	29.29	5.76	5.26	<0.01	0.120	0.155	**0.275**	*50.5*	42,000.00	8,599.5	10,914.0	13,326.6	12,301.8
161	New Haven, IN	DLA300-90-C-0031	7	59	Unknown	31.43	32.22	6.10	2.51	<0.01	0.102	0.055	**0.157**	*22.8*	29,500.00	6,644.3	7,593.3	9,271.9	9,504.9
162	New Haven, IN	GS-OOP-1319-1F SCM	DMS-137	50	Unknown	48.52	29.78	0.63	0.28	<0.01	0.002	0.053	**0.055**	*14.1*	13,730.00	2,858.2	5,455.7	6,661.8	4,088.8
163	New Haven, IN	GS-OOP-2923-2F SCM	108	24	Brazil	43.03	19.81	8.39	3.23	<0.01	0.020	0.101	**0.121**	*28.2*	6,400.00	886.3	2,255.4	2,753.9	1,267.8
164	New Haven, IN	GS-OOP-3774 SCM-1F	199-B	29	Belgian Congo	44.20	34.82	0.79	0.32	<0.01	0.003	0.053	**0.056**	*14.2*	7,917.00	1,927.0	2,865.8	3,499.3	2,756.7
165	New Haven, IN	GS-OOP-2427-1F SCM	A-DMS-123	31	Belgian Congo	48.30	30.94	0.71	0.26	<0.01	0.004	0.053	**0.057**	*14.2*	8,553.00	1,849.9	3,383.2	4,131.1	2,646.3
166	New Haven, IN	GS-OOP-10045 SCM 1F	1053A	8	Unknown	48.30	30.94	0.71	0.26	<0.01	0.004	0.053	**0.057**	*19.6*	2,184.00	472.4	863.9	1,054.9	675.7
167	New Haven, IN	GS-OOP-10045 SCM 1F	1053B	8	Unknown	61.47	12.37	3.78	2.12	0.01	0.018	0.058	**0.076**	*16.7*	2,128.00	184.0	1,071.3	1,308.1	263.2
168	New Haven, IN	Relocation DMO-00001	ONSP-4E179	7	Unknown	39.92	35.93	1.59	1.44	<0.01	0.004	0.117	**0.121**	*31.1*	2,847.00	715.1	930.8	1,136.5	1,022.9
169	New Haven, IN	Relocation DMO-00001	ONSP-4E178	23	Unknown	35.52	43.85	0.49	0.53	<0.01	0.004	0.079	**0.083**	*21.1*	9,223.00	2,827.1	2,682.9	3,276.0	4,044.3
170	New Haven, IN	Relocation DMO-00001	ONSP-4E182	46	Unknown	36.89	42.97	0.66	0.49	<0.01	0.002	0.065	**0.067**	*17.2*	19,321.00	5,803.6	5,837.2	7,127.5	8,302.2
171	New Haven, IN	Relocation DMO-00001	ONSP-30811	275	Unknown	27.34	34.74	1.24	3.26	<0.01	0.007	0.044	**0.051**	*12.1*	54,866.00	13,324.0	12,284.7	15,000.4	19,060.4
172	New Haven, IN	GS-OOP-10047 SCM 1F	MGK-110	8	Unknown	42.04	32.29	1.64	3.00	<0.01	0.043	0.103	**0.146**	*30.6*	3,273.00	738.8	1,126.9	1,376.0	1,056.9
173	New Haven, IN	Special Project FJO-935	MRC-281	28	Brazil	35.33	40.50	1.68	2.19	<0.01	0.004	0.098	**0.102**	*26.1*	5,676.00	1,606.9	1,642.3	2,005.3	2,298.8
174	New Haven, IN	Special Project FJO-935	83/113	38	Unknown	60.14	16.67	3.13	1.41	<0.01	0.013	0.052	**0.065**	*14.7*	21,282.00	2,480.0	10,481.9	12,799.0	3,547.7
175	New Haven, IN	Special Project FJO-935	MRC-264	9	Brazil	55.34	20.01	1.36	1.72	<0.01	0.014	0.118	**0.132**	*32.1*	4,435.00	620.4	2,010.0	2,454.3	887.4
176	New Haven, IN	Special Project FJO-935	23	5	Liquido Brazil	63.54	13.42	3.61	1.63	0.01	0.031	0.044	**0.075**	*14.1*	2,182.00	204.7	1,135.4	1,386.4	292.8
177	New Haven, IN	Special Project FJO-935	24	5	Brazil	66.25	10.95	3.47	1.44	0.01	0.036	0.031	**0.067**	*11.1*	2,200.00	168.4	1,193.6	1,457.5	240.9
178	New Haven, IN	Special Project FJO-935	MRC-229	11	Belgian Congo	41.82	31.76	4.00	1.25	<0.01	0.003	0.153	**0.156**	*40.4*	2,218.00	492.4	759.6	927.6	704.4
179	New Haven, IN	Special Project FJO-935	MRC-301	1	Rhodesia	49.08	21.18	6.85	1.29	0.06	0.016	0.073	**0.089**	*20.5*	265.00	39.2	106.5	130.1	56.1
180	New Haven, IN	Special Project FJO-935	MRC-299	1	Australia	77.29	4.15	0.18	0.90	0.06	0.021	0.031	**0.052**	*9.9*	277.00	8.0	175.3	214.1	11.5
181	New Haven, IN	Special Project FJO-935	MRC-313	1	Australia	65.68	2.99	<0.01	0.63	0.26	0.031	0.038	**0.069**	*12.5*	235.00	4.9	126.4	154.3	7.0
182	New Haven, IN	Special Project FJO-935	MRC-272	7	Nigeria	58.42	17.95	4.14	0.78	<0.01	0.085	0.035	**0.120**	*16.1*	1,320.00	165.6	631.5	771.1	236.9
183	New Haven, IN	Relocation DMO-00001	001107000G	13	Unknown	61.17	11.29	2.17	1.41	0.03	0.026	0.065	**0.091**	*19.2*	8,674.00	684.6	4,345.3	5,305.9	979.3
184	New Haven, IN	Relocation DMO-00001	001107000F	6	Unknown	56.89	15.54	3.53	1.20	0.01	0.096	0.032	**0.128**	*16.2*	3,781.00	410.7	1,761.6	2,151.0	587.6
185	New Haven, IN	Relocation DMO-00001	001060001	10	Unknown	55.20	21.43	3.14	1.73	<0.01	0.024	0.059	**0.083**	*17.5*	6,640.00	994.7	3,001.7	3,665.3	1,423.0
186	New Haven, IN	Relocation DMO-00001	0782362678	4	Unknown	45.62	27.67	0.66	1.03	<0.01	0.005	0.050	**0.055**	*13.5*	1,693.00	327.5	632.5	772.3	468.5
187	New Haven, IN	Relocation DMO-00001	0782362574	5	Unknown	42.47	28.86	1.50	1.70	<0.01	0.004	0.059	**0.063**	*15.8*	2,322.00	468.4	807.6	986.2	670.1
188	New Haven, IN	Relocation DMO-00001	0010700E	5	Unknown	65.38	4.72	2.67	1.11	0.06	0.038	0.090	**0.128**	*26.7*	3,454.00	114.0	1,849.4	2,258.2	163.0
189	New Haven, IN	Relocation DMO-00001	001060002	13	Unknown	52.71	21.40	3.90	2.62	<0.01	0.017	0.060	**0.077**	*17.1*	8,765.00	1,311.2	3,783.6	4,620.0	1,875.7
190	New Haven, IN	Relocation DMO-00001	111	98	Unknown	57.02	19.67	1.98	1.87	<0.01	0.009	0.067	**0.076**	*18.3*	64,157.00	8,821.7	29,959.5	36,582.3	12,619.7
191	New Haven, IN	Special Project FJO-935	MRC-340	44	Belgian Congo	36.78	42.30	0.60	0.66	<0.01	0.002	0.062	**0.064**	*16.5*	13,222.00	3,909.7	3,982.6	4,863.1	5,592.9
192	New Haven, IN	Special Project FJO-935	MRC-342	4	Nigeria	35.57	40.77	3.06	1.21	<0.01	0.042	0.034	**0.076**	*12.4*	1,061.00	302.4	309.1	377.4	432.6
193	New Haven, IN	Special Project FJO-935	GEO-840	111	Belgian Congo	29.17	33.92	1.93	1.82	<0.01	0.007	0.043	**0.050**	*11.9*	22,056.00	5,229.8	5,269.0	6,433.7	7,481.4
194	New Haven, IN	Special Project FJO-935	GEO-836	108	Belgian Congo	27.56	33.79	1.97	1.84	<0.01	0.008	0.043	**0.051**	*11.9*	21,617.00	5,106.1	4,879.1	5,957.6	7,304.4
195	New Haven, IN	Special Project FJO-935	MRC-287	3	India	36.49	41.87	0.72	0.68	<0.01	0.048	0.026	**0.074**	*10.7*	600.00	175.6	179.3	218.9	251.2
196	New Haven, IN	Special Project FJO-935	GEO-839	111	Belgian Congo	27.41	31.35	2.08	1.54	<0.01	0.006	0.046	**0.052**	*12.6*	22,057.00	4,833.8	4,951.3	6,045.8	6,914.9
197	New Haven, IN	Special Project FJO-935	GEO-816	110	Belgian Congo	30.15	35.65	1.64	2.30	<0.01	0.007	0.044	**0.051**	*12.1*	22,433.00	5,590.5	5,539.1	6,763.5	7,997.4
198	New Haven, IN	Special Project FJO-935	MRC-336	4	Belgian Congo	35.42	36.04	1.62	1.70	<0.01	0.004	0.101	**0.105**	*26.9*	1,221.00	307.6	354.2	432.5	440.0
199	New Haven, IN	Special Project FJO-935	GEO-837	111	Belgian Congo	26.64	31.66	1.63	2.32	<0.01	0.007	0.044	**0.051**	*12.1*	22,032.00	4,876.0	4,806.7	5,869.3	6,975.3
200	New Haven, IN	Special Project FJO-935	GEO-843	110	Belgian Congo	28.19	30.35	2.82	1.36	0.01	0.005	0.045	**0.050**	*12.2*	21,826.00	4,630.6	5,038.9	6,152.7	6,624.2
201	New Haven, IN	Special Project FJO-935	GEO-817	109	Belgian Congo	30.26	36.16	1.69	2.10	<0.01	0.009	0.041	**0.050**	*11.5*	21,785.25	5,506.7	5,398.8	6,592.2	7,877.5
202	New Haven, IN	Special Project FJO-935	MRC-286	7	India	30.83	47.16	0.49	1.01	<0.01	0.148	0.041	**0.189**	*22.8*	1,909.00	629.3	482.0	588.5	900.3
203	New Haven, IN	Special Project FJO-935	MRC-339	24	Belgian Congo	35.82	34.60	0.57	2.52	<0.01	0.008	0.062	**0.070**	*16.9*	7,220.00	1,746.3	2,118.0	2,586.2	2,498.1
204	New Haven, IN	Special Project FJO-935	MRC-293	20	Belgian Congo	32.75	40.60	1.33	1.26	<0.01	0.002	0.061	**0.063**	*16.2*	3,986.00	1,131.3	1,069.1	1,305.4	1,618.3
205	New Haven, IN	Special Project FJO-935	MRC-358	83	Nigeria	37.44	42.66	0.67	0.55	<0.01	0.001	0.061	**0.062**	*16.1*	24,863.00	7,414.4	7,623.5	9,308.7	10,606.6
206	New Haven, IN	Special Project FJO-935	MRC-294	40	Belgian Congo	33.96	45.64	0.54	0.59	<0.01	0.004	0.132	**0.136**	*35.0*	8,022.00	2,559.4	2,231.1	2,724.3	3,661.2
207	New Haven, IN	GS-OOP-10032 SCM 1F	Rio E	47	Brazil	51.57	28.54	0.68	0.74	<0.01	0.013	0.041	**0.054**	*11.8*	10,798.00	2,154.3	4,560.4	5,568.5	3,081.7
208	New Haven, IN	Relocation DMO-00001	1116000A	9	Unknown	48.48	26.62	2.80	0.94	<0.01	0.001	0.076	**0.077**	*20.0*	3,146.00	585.4	1,249.1	1,525.2	837.5
209	New Haven, IN	Relocation DMO-00001	0021671533	3	Unknown	45.46	30.28	0.55	0.62	<0.01	0.002	0.056	**0.058**	*14.9*	1,762.00	373.0	656.0	801.0	533.5
															783,134.25	**163,857.4**	**243,525.9**	**297,360.0**	**234,403.4**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 2 - Tantalum Minerals More Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
210	New Haven, IN	Special Project FJO-935	MRC-324	40	Australia	38.73	41.64	0.22	0.32	<0.01	0.023	0.094	**0.117**	*26.6*	683.00	198.8	216.6	264.5	284.4
211	New Haven, IN	Special Project FJO-935	MRC-292	8	Belgian Congo	32.26	32.62	2.44	1.67	<0.01	0.004	0.092	**0.096**	*24.5*	1,665.00	379.7	439.9	537.1	543.1
212	New Haven, IN	Special Project FJO-935	MRC-262	21	Brazil	32.61	44.97	0.54	1.53	<0.01	0.041	0.263	**0.304**	***72.4***	4,446.00	1,397.6	1,187.4	1,449.8	1,999.4
213	New Haven, IN	Special Project FJO-935	MRC-357	15	Belgian Congo	30.50	28.83	1.19	1.17	<0.01	0.004	0.079	**0.083**	*21.1*	3,082.00	621.1	769.8	940.0	888.5
214	New Haven, IN	Special Project FJO-935	MRC-87	25	Rhodesia	54.52	7.92	7.82	1.75	<0.01	0.024	0.056	**0.080**	*16.7*	7,700.00	426.3	3,438.0	4,198.0	609.8
215	New Haven, IN	Special Project FJO-935	MRC-279	15	Brazil	40.47	30.38	4.11	3.93	<0.01	0.028	0.128	**0.156**	*35.9*	4,388.00	931.9	1,454.3	1,775.8	1,333.1
216	New Haven, IN	Special Project FJO-935	MRC-113	23	Brazil	51.79	23.44	1.56	2.83	<0.01	0.008	0.080	**0.088**	*21.7*	6,642.00	1,088.3	2,817.1	3,439.9	1,556.9
217	New Haven, IN	Special Project FJO-935	MRC-138	10	Liquido Brazil	49.44	24.73	2.36	3.29	<0.01	0.019	0.069	**0.088**	*19.7*	2,853.00	493.2	1,155.2	1,410.5	705.5
218	New Haven, IN	Special Project FJO-935	MRC-196	8	Brazil	47.06	16.20	8.36	3.32	<0.01	0.024	0.047	**0.071**	*14.3*	2,250.00	254.8	867.2	1,058.9	364.5
219	New Haven, IN	Special Project FJO-935	MRC-256	9	Brazil	47.11	28.63	1.34	2.01	<0.01	0.003	0.131	**0.134**	*34.7*	2,194.00	439.1	846.5	1,033.6	628.1
220	New Haven, IN	Special Project FJO-935	MRC-311	3	Belgian Congo	64.48	13.64	2.47	0.66	<0.01	0.006	0.063	**0.069**	*17.0*	849.00	81.0	448.3	547.4	115.8
221	New Haven, IN	Special Project FJO-935	MRC-283	4	Nigeria	60.56	16.35	4.59	1.12	<0.01	0.039	0.021	**0.060**	*9.0*	1,041.00	119.0	516.3	630.4	170.2
222	New Haven, IN	Special Project FJO-935	MRC-323	3	Nigeria	40.14	35.59	3.49	1.61	<0.01	0.057	0.031	**0.088**	*12.8*	781.00	194.3	256.7	313.5	278.0
223	New Haven, IN	Special Project FJO-935	22	5	Liquido Brazil	46.95	25.87	2.45	2.84	<0.01	0.037	0.172	**0.209**	*48.2*	2,153.00	389.4	827.8	1,010.8	557.0
224	New Haven, IN	Special Project FJO-935	13	16	Liquido Brazil	60.03	14.97	3.74	1.88	<0.01	0.027	0.143	**0.170**	*39.8*	7,665.00	802.1	3,768.3	4,601.3	1,147.5
225	New Haven, IN	Special Project FJO-935	MRC-183	8	Unknown	65.55	13.62	1.23	1.53	<0.01	0.012	0.038	**0.050**	*11.0*	2,208.00	210.2	1,185.3	1,447.3	300.7
226	New Haven, IN	Special Project FJO-935	12	9	Liquido Brazil	68.32	10.36	2.29	1.53	0.02	0.088	0.061	**0.149**	*23.2*	4,379.00	317.1	2,450.1	2,991.7	453.7
227	New Haven, IN	Special Project FJO-935	20	13	Liquido Brazil	50.77	19.45	1.91	1.93	<0.01	0.034	0.389	**0.423**	***105.0***	6,535.00	888.5	2,717.2	3,317.8	1,271.1
228	New Haven, IN	Special Project FJO-935	15	7	Liquido Brazil	54.57	15.50	3.40	2.35	<0.01	0.037	0.278	**0.315**	***76.0***	3,280.00	355.4	1,465.9	1,789.9	508.4
229	New Haven, IN	Special Project FJO-935	MRC-126	11	Belgian Congo	55.84	12.63	1.36	0.94	<0.01	0.002	0.051	**0.053**	*13.6*	2,629.00	232.1	1,202.3	1,468.0	332.0
230	New Haven, IN	Special Project FJO-935	MRC-199	7	Brazil	54.02	22.28	2.05	2.32	<0.01	0.008	0.055	**0.063**	*15.1*	2,100.00	327.1	929.0	1,134.4	467.9
231	New Haven, IN	Special Project FJO-935	MRC-129	22	Brazil	50.39	23.82	1.40	3.46	<0.01	0.021	0.079	**0.100**	*22.5*	6,424.00	1,069.7	2,651.0	3,237.1	1,530.2
232	New Haven, IN	Special Project FJO-935	MRC-139	6	Liquido Brazil	45.94	26.00	4.20	2.63	<0.01	0.040	0.054	**0.094**	*17.4*	1,595.00	289.9	600.1	732.7	414.7
233	New Haven, IN	Special Project FJO-935	1	10	Unknown	67.41	6.57	0.14	0.14	0.05	0.043	0.309	**0.352**	***84.7***	3,000.00	137.8	1,656.2	2,022.3	197.1
234	New Haven, IN	Special Project FJO-935	1A&2	3	Unknown	66.54	6.90	0.09	0.15	0.05	0.047	0.280	**0.327**	*77.4*	694.00	33.5	378.2	461.8	47.9
235	New Haven, IN	Special Project FJO-935	MRC-189	11	Liquido Brazil	66.67	12.21	1.22	1.59	<0.01	0.015	0.038	**0.053**	*11.2*	2,280.00	194.6	1,244.9	1,520.1	278.4
236	New Haven, IN	Special Project FJO-935	MRC-259	11	Brazil	51.24	22.13	3.23	2.90	<0.01	0.009	0.054	**0.063**	*14.9*	2,191.00	338.9	919.4	1,122.7	484.9
237	New Haven, IN	Special Project FJO-935	MRC-180	11	Unknown	66.14	13.62	1.13	1.54	<0.01	0.016	0.037	**0.053**	*11.0*	2,196.00	209.1	1,189.5	1,452.4	299.1
238	New Haven, IN	Special Project FJO-935	MRC-173	11	Liquido Brazil	66.55	12.40	1.16	1.61	<0.01	0.020	0.034	**0.054**	*10.6*	2,200.00	190.7	1,199.0	1,464.1	272.8
239	New Haven, IN	Special Project FJO-935	MRC-275	3	Uganda	33.19	15.39	<0.01	0.71	0.13	0.008	0.162	**0.170**	*43.2*	559.00	60.1	151.9	185.5	86.0
240	New Haven, IN	Special Project FJO-935	MRC-312	1	Australia	71.99	2.72	0.09	0.52	0.44	0.015	0.038	**0.053**	*11.2*	241.00	4.6	142.1	173.5	6.6
241	New Haven, IN	Special Project FJO-935	MRC-193	10	Brazil	48.48	14.32	7.75	3.41	<0.01	0.023	0.064	**0.087**	*18.7*	2,078.00	208.0	825.0	1,007.4	297.6
242	New Haven, IN	Special Project FJO-935	MRC-178	11	Liquido Brazil	65.77	13.71	1.23	1.49	<0.01	0.015	0.039	**0.054**	*11.5*	2,188.00	209.7	1,178.5	1,439.0	300.0
243	New Haven, IN	Special Project FJO-935	MRC-213	13	Salt Lake City UT	73.20	6.35	<0.01	0.16	0.03	0.037	0.172	**0.209**	*48.2*	3,215.00	142.7	1,927.3	2,353.4	204.2
244	New Haven, IN	Special Project FJO-935	MRC-318	11	Australia	64.49	13.29	3.37	0.57	<0.01	0.016	0.041	**0.057**	*12.1*	3,080.00	286.1	1,626.7	1,986.3	409.3
245	New Haven, IN	Special Project FJO-935	MRC-322	5	Nigeria	40.18	35.46	4.65	1.20	0.01	0.055	0.033	**0.088**	*13.1*	1,329.00	329.4	437.3	534.0	471.3
246	New Haven, IN	Special Project FJO-935	MRC-100	11	Rhodesia	50.67	4.68	7.50	2.83	<0.01	0.036	0.046	**0.082**	*15.0*	3,300.00	108.0	1,369.4	1,672.1	154.4
247	New Haven, IN	Special Project FJO-935	MRC-175	8	Liquido Brazil	65.30	13.66	1.24	1.54	<0.01	0.021	0.036	**0.057**	*11.2*	2,266.00	216.4	1,211.8	1,479.7	309.5
248	New Haven, IN	Special Project FJO-935	MRC-190	8	Liquido Brazil	50.61	16.08	5.24	3.32	0.01	0.023	0.065	**0.088**	*18.9*	2,197.00	247.0	910.6	1,111.9	353.3
249	New Haven, IN	Special Project FJO-935	MRC-326	3	Australia	54.17	7.26	7.33	1.61	<0.01	0.133	0.025	**0.158**	*17.4*	723.00	36.7	320.7	391.6	52.5
250	New Haven, IN	Special Project FJO-935	MRC-270	16	Liquido Brazil	53.66	20.31	4.21	1.98	<0.01	0.010	0.064	**0.074**	*17.6*	4,791.00	680.2	2,105.4	2,570.9	973.1
251	New Haven, IN	Special Project FJO-935	MRC-309	10	Dixon NM	72.44	6.16	<0.01	0.16	0.03	0.018	0.132	**0.150**	*36.1*	2,312.00	99.6	1,371.6	1,674.8	142.4
252	New Haven, IN	Special Project FJO-935	MRC-278	22	Brazil	43.04	27.68	4.59	3.49	<0.01	0.020	0.098	**0.118**	*27.4*	6,487.00	1,255.2	2,286.5	2,792.0	1,795.6
253	New Haven, IN	Special Project FJO-935	MRC-77	6	Nigeria	53.91	17.35	7.67	2.20	<0.01	0.015	0.055	**0.070**	*15.7*	1,174.00	142.4	518.3	632.9	203.7
254	New Haven, IN	Special Project FJO-935	MRC-271	22	Brazil	53.51	21.85	1.75	2.15	<0.01	0.011	0.092	**0.103**	*25.1*	4,387.00	670.1	1,922.5	2,347.5	958.6
255	New Haven, IN	Special Project FJO-935	MRC-247	4	Nigeria	60.70	11.67	8.08	2.12	<0.01	0.052	0.035	**0.087**	*13.4*	843.00	68.8	419.1	511.7	98.4
256	New Haven, IN	Special Project FJO-935	MRC-263	15	Brazil	48.87	28.09	1.13	1.70	<0.01	0.021	0.138	**0.159**	*38.0*	4,404.00	864.8	1,762.6	2,152.2	1,237.1
257	New Haven, IN	Special Project FJO-935	MRC-274	2	Uganda	37.10	32.34	11.29	0.17	<0.01	0.027	0.030	**0.057**	*10.1*	522.00	118.0	158.6	193.7	168.8
258	New Haven, IN	Special Project FJO-935	MRC-179	8	Unknown	64.80	14.34	1.28	1.52	<0.01	0.009	0.043	**0.052**	*12.0*	2,185.00	219.0	1,159.5	1,415.9	313.3
259	New Haven, IN	Special Project FJO-935	MRC-117	8	Brazil	51.72	13.76	6.89	3.98	<0.01	0.025	0.062	**0.087**	*18.3*	2,150.00	206.8	910.7	1,112.0	295.8
260	New Haven, IN	Relocation DMO-00001	3 NONG	3	Unknown	35.08	31.48	0.01	1.54	<0.01	0.024	0.107	**0.131**	*30.1*	1,188.00	261.4	341.3	416.8	374.0
261	New Haven, IN	GS-OOP-1087-1F SCM	RPS	1	Australia	53.23	12.99	6.63	0.26	<0.01	0.010	0.093	**0.103**	*25.2*	1,487.00	135.0	648.2	791.5	193.2
262	New Haven, IN	GS-OOP-10717 SCM	1138	16	South Rhodesia	40.80	34.56	3.02	0.32	<0.01	0.006	0.050	**0.056**	*13.6*	2,215.00	535.1	740.1	903.7	765.5
263	New Haven, IN	Relocation DMO-00001	1107(569)	3	Unknown	61.14	15.18	2.36	1.12	0.01	0.016	0.050	**0.066**	*14.4*	1,567.00	166.3	784.6	958.1	237.9
															146,991.00	**19,882.5**	**64,028.1**	**78,182.2**	**28,442.5**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 2 - Tantalum Minerals More Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
264	New Haven, IN	Special Project FJO-935	MRC-273	2	Nigeria	45.83	29.66	3.95	1.31	<0.01	0.061	0.034	**0.095**	*13.9*	595.00	123.4	223.3	272.7	176.5
265	New Haven, IN	Special Project FJO-935	MRC-86	22	Brazil	54.11	20.47	2.88	2.81	<0.01	0.010	0.069	**0.079**	*18.9*	4,352.00	622.7	1,928.5	2,354.9	890.9
266	New Haven, IN	Special Project FJO-935	MRC-94	22	Brazil	51.29	21.56	1.80	3.81	<0.01	0.013	0.059	**0.072**	*16.6*	4,324.00	651.7	1,816.3	2,217.8	932.3
267	New Haven, IN	Special Project FJO-935	MRC-186	12	Liquido Brazil	62.81	14.01	1.89	1.42	0.05	0.132	0.031	**0.163**	*18.9*	2,443.00	239.3	1,256.7	1,534.4	342.3
268	New Haven, IN	Special Project FJO-935	MRC-153	1	Australia	51.85	23.47	6.56	0.12	<0.01	0.009	0.057	**0.066**	*15.7*	300.00	49.2	127.4	155.6	70.4
269	New Haven, IN	Special Project FJO-935	MRC-162	10	Rhodesia	55.35	6.17	14.51	1.53	<0.01	0.038	0.058	**0.096**	*18.3*	2,026.00	87.4	918.4	1,121.4	125.0
270	New Haven, IN	Special Project FJO-935	MRC-317	7	Australia	60.88	5.51	6.09	1.53	<0.01	0.097	0.023	**0.120**	*13.9*	1,456.00	56.1	725.9	886.4	80.2
271	New Haven, IN	Special Project FJO-935	MRC-291	18	Belgian Congo	34.92	22.73	2.41	2.97	<0.01	0.008	0.059	**0.067**	*16.2*	3,541.00	562.6	1,012.7	1,236.5	804.9
272	New Haven, IN	Special Project FJO-935	MRC-333	1	Uganda	36.08	19.01	32.16	0.13	0.02	0.047	0.017	**0.064**	*8.3*	160.00	21.3	47.3	57.7	30.4
273	New Haven, IN	Special Project FJO-935	MRC-343	43	Belgian Congo	43.44	32.54	1.83	1.20	<0.01	0.009	0.134	**0.143**	*35.9*	8,653.00	1,968.3	3,078.4	3,758.9	2,815.7
274	New Haven, IN	Special Project FJO-935	MRC-223	22	Brazil	68.20	10.67	1.51	1.61	<0.01	0.026	0.027	**0.053**	*9.0*	4,397.00	328.0	2,455.9	2,998.8	469.2
275	New Haven, IN	Special Project FJO-935	MRC-350	4	Uganda	59.49	8.65	6.99	0.19	<0.01	0.013	0.081	**0.094**	*22.3*	838.00	50.7	408.3	498.5	72.5
276	New Haven, IN	Special Project FJO-935	MRC-290	5	Belgian Congo	52.70	16.80	0.78	0.70	<0.01	0.003	0.070	**0.073**	*18.6*	1,066.00	125.2	460.1	561.8	179.1
277	New Haven, IN	Special Project FJO-935	MRC-254	7	Rhodesia	50.80	25.48	1.86	1.63	0.03	0.022	0.097	**0.119**	*27.3*	1,940.00	345.5	807.1	985.5	494.3
278	New Haven, IN	Special Project FJO-935	MRC-261	8	Brazil	41.69	29.16	4.64	2.70	<0.01	0.045	0.083	**0.128**	*25.5*	2,182.00	444.8	745.0	909.7	636.3
279	New Haven, IN	Special Project FJO-935	MRC-174	11	Liquido Brazil	66.26	12.54	1.39	1.60	<0.01	0.016	0.039	**0.055**	*11.5*	2,168.00	190.0	1,176.4	1,436.5	271.9
280	New Haven, IN	Special Project FJO-935	MRC-195	8	Brazil	44.75	14.30	12.67	3.56	<0.01	0.018	0.055	**0.073**	*15.9*	2,190.00	218.9	802.6	980.0	313.2
281	New Haven, IN	GS-OOP-D 18002	1146B	40	Brazil	54.72	18.94	2.25	2.91	0.02	0.026	0.096	**0.122**	*27.3*	4,404.00	583.1	1,973.6	2,409.9	834.1
282	New Haven, IN	GS-OOP-D 18002	1146D	40	Brazil	54.69	19.35	3.07	2.79	<0.01	0.022	0.091	**0.113**	*25.7*	4,381.00	592.6	1,962.2	2,396.0	847.7
283	New Haven, IN	GS-OOP-D 18002	1147	113	Brazil	49.00	25.94	1.94	1.16	<0.01	0.023	0.042	**0.065**	*12.9*	9,915.00	1,797.9	3,978.8	4,858.4	2,572.0
284	New Haven, IN	GS-OOP-D 18002	1105	43	Great Britain	50.70	26.51	1.26	0.62	<0.01	0.014	0.038	**0.052**	*11.1*	3,098.00	574.1	1,286.3	1,570.7	821.3
285	New Haven, IN	GS-OOP-D 18002	1140	153	Australia	41.20	29.86	1.41	1.18	<0.01	0.025	0.055	**0.080**	*16.5*	9,379.00	1,957.7	3,164.6	3,864.1	2,800.6
286	New Haven, IN	GS-OOP-10717 SCM	1165	11	England	42.86	29.17	3.14	0.87	<0.01	0.015	0.069	**0.084**	*19.3*	4,347.00	886.4	1,525.8	1,863.1	1,268.0
287	New Haven, IN	Relocation DMO-00001	111-Sweepings	2	Unknown	57.02	19.67	1.98	1.87	<0.01	0.009	0.067	**0.076**	*12.5*	864.00	118.8	403.5	492.7	169.9
															79,019.00	**12,595.6**	**32,284.9**	**39,421.8**	**18,018.4**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 2 - Tantalum Minerals More Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
288	New Haven, IN	GS-OOP-2923-2F SCM	118	31	Brazil	57.02	12.49	12.95	0.37	<0.01	0.001	0.033	0.034	*8.8*	8,550.00	746.5	3,992.6	4,875.2	1,067.9
289	New Haven, IN	GS-OOP-10224 SCM 1F	59	8	Unknown	68.79	9.23	2.96	1.63	<0.01	0.003	0.022	0.025	*6.0*	2,157.00	139.2	1,215.2	1,483.8	199.1
290	New Haven, IN	GS-OOP-10224 SCM 1F	60	8	Unknown	63.95	11.09	4.86	1.68	<0.01	0.005	0.030	0.035	*8.3*	2,125.00	164.7	1,112.9	1,358.9	235.7
291	New Haven, IN	GS-OOP-2923-1 SCM	106	16	Brazil	67.32	10.28	2.15	1.85	<0.01	0.012	0.030	0.042	*8.9*	4,265.00	306.5	2,351.4	2,871.2	438.4
292	New Haven, IN	GS-OOP-10224 SCM 1F	AS	4	Brazil	64.65	16.08	0.14	1.75	<0.01	0.002	0.027	0.029	*7.3*	925.00	104.0	489.7	598.0	148.7
293	New Haven, IN	GS-OOP-3774 SCM 1F	199-C	22	Belgian Congo	44.84	30.90	0.96	0.37	<0.01	0.004	0.036	0.040	*9.8*	5,355.00	1,156.7	1,966.5	2,401.2	1,654.7
294	New Haven, IN	GS-OOP-3774 SCM 1F	199-D	11	Belgian Congo	69.25	10.36	0.75	0.30	<0.01	0.001	0.009	0.010	*2.4*	2,851.00	206.5	1,616.9	1,974.3	295.4
295	New Haven, IN	GS-OOP-2923-1 SCM	105	8	Brazil	67.35	10.64	2.05	1.91	<0.01	0.011	0.032	0.043	*9.3*	2,192.00	163.0	1,209.0	1,476.3	233.2
296	New Haven, IN	GS-OOP-2427-1F SCM	C-DMS-C-1	21	Belgian Congo	48.39	29.03	0.75	0.61	<0.01	0.001	0.016	0.017	*4.3*	5,670.00	1,150.6	2,247.0	2,743.7	1,646.0
297	New Haven, IN	GS-OOP-10045 SCM 1F	1053	22	Unknown	67.32	9.95	3.39	1.50	<0.01	0.009	0.028	0.037	*8.1*	6,594.00	458.6	3,635.4	4,439.1	656.1
298	New Haven, IN	GS-OOP-10047 SCM 1F	MGK-108	14	Unknown	87.77	1.49	0.72	0.22	<0.01	<0.001	0.001	0.001	*0.3*	3,660.00	38.1	2,630.8	3,212.4	54.5
299	New Haven, IN	GS-OOP-10047 SCM 1F	MGK-112	15	Unknown	46.85	22.88	0.58	1.84	<0.01	0.006	0.032	0.038	*8.9*	2,162.00	345.8	829.5	1,012.9	494.7
300	New Haven, IN	Special Project FJO-935	25	5	Brazil	67.16	11.30	2.56	1.51	<0.01	0.006	0.022	0.028	*6.3*	2,202.00	173.9	1,211.1	1,478.9	248.8
301	New Haven, IN	Special Project FJO-935	MRC-297	7	Belgian Congo	54.58	11.60	0.54	3.43	<0.01	0.005	0.027	0.032	*7.5*	1,385.00	112.3	619.1	755.9	160.7
302	New Haven, IN	Special Project FJO-935	MRC-325	9	Australia	62.51	14.91	3.93	0.54	<0.01	0.010	0.034	0.044	*9.7*	1,740.00	181.4	890.8	1,087.7	259.4
303	New Haven, IN	Special Project FJO-935	VA-9	1	Unknown	69.83	9.79	2.27	1.29	<0.01	0.013	0.024	0.037	*7.4*	167.75	11.5	95.9	117.1	16.4
304	New Haven, IN	Relocation Project DMO-00001	ONSP-4E180	4	Unknown	54.49	11.85	0.72	0.52	<0.01	0.004	0.011	0.015	*3.2*	1,988.00	164.7	887.1	1,083.3	235.6
305	New Haven, IN	Relocation Project DMO-00001	11080013	10	Unknown	70.05	9.66	1.30	1.69	<0.01	0.002	0.019	0.021	*5.2*	5,364.00	362.2	3,077.2	3,757.5	518.2
306	New Haven, IN	Relocation Project DMO-00001	11080014	10	Unknown	70.15	9.87	1.51	1.71	<0.01	0.001	0.029	0.030	*7.7*	5,308.00	366.2	3,049.4	3,723.6	523.9
307	New Haven, IN	Relocation Project DMO-00001	001060005	18	Unknown	70.00	8.69	2.96	1.26	<0.01	0.002	0.017	0.019	*4.6*	11,014.00	669.1	6,314.0	7,709.8	957.1
308	New Haven, IN	Special Project FJO-935	GEO-819	107	Belgian Congo	31.70	33.40	1.53	1.75	<0.01	0.007	0.034	0.041	*9.5*	21,298.50	4,972.8	5,529.3	6,751.6	7,113.7
309	New Haven, IN	Special Project FJO-935	MRC-243	15	Brazil	31.70	33.40	1.53	1.75	<0.01	0.007	0.034	0.041	*9.3*	4,368.00	1,019.8	1,134.0	1,384.7	1,458.9
310	New Haven, IN	Special Project FJO-935	MRC-246	12	Liquido Brazil	68.64	10.13	1.04	1.68	<0.01	0.004	0.031	0.035	*8.5*	3,524.00	249.5	1,981.0	2,418.9	357.0
311	New Haven, IN	Special Project FJO-935	MRC-285	3	Nigeria	62.40	16.62	3.63	0.65	<0.01	0.012	0.027	0.039	*8.1*	738.00	85.7	377.1	460.5	122.7
312	New Haven, IN	Special Project FJO-935	MRC-277	3	Nigeria	38.62	30.74	15.07	0.67	<0.01	0.002	0.028	0.030	*7.5*	879.00	188.9	278.0	339.5	270.2
313	New Haven, IN	Special Project FJO-935	MRC-228	10	Brazil	67.60	11.29	1.27	1.59	<0.01	0.006	0.031	0.037	*8.6*	4,676.00	369.0	2,588.7	3,161.0	527.9
314	New Haven, IN	Special Project FJO-935	21	5	Liquido Brazil	67.77	10.62	1.99	1.58	<0.01	0.008	0.032	0.040	*9.1*	2,178.00	161.7	1,208.8	1,476.0	231.3
315	New Haven, IN	Special Project FJO-935	26	5	Brazil	64.02	12.88	3.04	2.00	<0.01	0.009	0.033	0.042	*9.4*	2,184.00	196.6	1,145.1	1,398.2	281.3
316	New Haven, IN	Special Project FJO-935	MRC-306	3	Nigeria	51.48	24.32	5.75	1.16	<0.01	0.007	0.025	0.032	*7.1*	612.00	104.0	258.0	315.1	148.8
317	New Haven, IN	Special Project FJO-935	MRC-355	67	Belgian Congo	60.86	11.21	1.18	0.61	<0.01	0.001	0.010	0.011	*2.7*	13,388.00	1,049.1	6,672.8	8,147.9	1,500.8
318	New Haven, IN	Special Project FJO-935	GEO-809	98	Belgian Congo	29.53	32.00	3.90	2.73	<0.01	<0.001	0.001	0.001	*0.3*	19,648.00	4,395.1	4,751.7	5,802.1	6,287.4
319	New Haven, IN	Special Project FJO-935	MRC-226	9	Brazil	66.31	11.93	1.37	1.75	<0.01	0.006	0.034	0.040	*9.4*	4,500.00	375.3	2,443.7	2,984.0	536.9
320	New Haven, IN	Special Project FJO-935	30	34	Brazil	63.99	12.45	4.00	1.93	<0.01	0.010	0.031	0.041	*9.0*	16,643.00	1,448.4	8,721.8	10,649.9	2,072.1
321	New Haven, IN	Special Project FJO-935	MRC-166	15	Belgian Congo	54.57	10.98	7.67	1.67	<0.01	0.001	0.010	0.011	*2.7*	3,053.00	234.3	1,364.4	1,666.0	335.2
322	New Haven, IN	Special Project FJO-935	MRC-303	33	Unknown	55.95	25.11	1.62	0.57	<0.01	<0.001	0.031	0.031	*8.2*	6,647.00	1,166.7	3,045.7	3,719.0	1,669.1
323	New Haven, IN	Special Project FJO-935	MRC-321	15	Nigeria	62.52	12.89	9.00	0.39	<0.01	0.010	0.027	0.037	*7.9*	4,475.00	403.2	2,291.3	2,797.8	576.8
324	New Haven, IN	Special Project FJO-935	MRC-224	15	Brazil	67.24	11.79	1.28	1.71	<0.01	0.007	0.034	0.041	*9.5*	4,394.00	362.1	2,419.6	2,954.5	518.1
325	New Haven, IN	Special Project FJO-935	MRC-284	7	Nigeria	64.11	12.73	6.31	0.79	<0.01	0.010	0.014	0.024	*4.5*	1,935.00	172.2	1,015.9	1,240.5	246.3
326	New Haven, IN	Special Project FJO-935	MRC-177	11	Liquido Brazil	65.19	13.82	1.04	1.53	<0.01	0.007	0.035	0.042	*9.8*	2,188.00	211.4	1,168.1	1,426.4	302.4
327	New Haven, IN	Special Project FJO-935	MRC-217	22	Liquido Brazil	67.80	11.33	1.39	1.66	<0.01	0.008	0.032	0.040	*9.1*	4,375.00	346.5	2,429.2	2,966.3	495.7
328	New Haven, IN	Special Project FJO-935	MRC-222	22	Brazil	67.52	11.38	1.27	1.66	<0.01	0.007	0.034	0.041	*9.5*	4,393.00	349.5	2,429.2	2,966.2	499.9
329	New Haven, IN	GS-OOP-3922 SCM 1F	DMS-206	30	Belgian Congo	56.91	24.68	0.98	0.33	<0.01	0.002	0.024	0.026	*6.5*	8,052.00	1,389.2	3,752.8	4,582.4	1,987.2
330	New Haven, IN	GS-OOP-3963 SCM 1F	DMS-216	13	Belgian Congo	43.82	31.84	0.95	0.27	<0.01	0.004	0.008	0.012	*2.4*	3,323.00	739.6	1,192.5	1,456.1	1,058.0
331	New Haven, IN	GS-OOP-1099-1 SCM	1	3	American	50.65	22.28	5.13	0.53	<0.01	0.001	0.033	0.034	*8.8*	660.00	102.8	273.8	334.3	147.0
332	New Haven, IN	GS-OOP-3902-1F SCM	1	13	Unknown	70.03	6.63	7.28	0.32	<0.01	<0.001	0.015	0.015	*4.0*	3,768.00	174.6	2,161.0	2,638.7	249.8
333	New Haven, IN	GS-OOP-3972 SCM 1F	1	17	Sweden	55.71	11.75	0.72	3.25	<0.01	0.026	0.021	0.047	*7.6*	4,055.00	333.1	1,850.1	2,259.0	476.5
334	New Haven, IN	GS-OOP-949-1F SCM	2	9	Nigeria	62.41	18.33	2.34	0.55	<0.01	0.017	0.028	0.045	*8.7*	2,257.00	289.2	1,153.6	1,408.6	413.7
															223,886.25	**27,912.1**	**103,079.0**	**125,865.7**	**39,929.2**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 1 - Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
335	New Haven, IN	Special Project FJO-935	MRC-320	2	Unknown	54.64	25.06	2.46	0.59	<0.01	0.007	0.021	0.028	*6.1*	408.00	71.5	182.6	222.9	102.2
336	New Haven, IN	Special Project FJO-935	MRC-276	10	Brazil	63.06	13.08	2.43	2.04	<0.01	0.010	0.026	0.036	*7.6*	2,920.00	267.0	1,508.0	1,841.4	381.9
337	New Haven, IN	Special Project FJO-935	MRC-315	11	Australia	44.82	24.72	6.54	1.55	0.31	0.010	0.009	0.019	*3.2*	3,086.00	533.3	1,132.7	1,383.1	762.9
338	New Haven, IN	Special Project FJO-935	MRC-206	8	Brazil	61.66	12.96	2.70	2.44	<0.01	0.008	0.023	0.031	*6.7*	2,200.00	199.3	1,110.9	1,356.5	285.1
339	New Haven, IN	Special Project FJO-935	MRC-239	8	Liquido Brazil	63.16	14.68	1.48	2.06	<0.01	0.005	0.033	0.038	*9.1*	2,192.00	224.9	1,133.8	1,384.5	321.8
340	New Haven, IN	Special Project FJO-935	MRC-238	8	Brazil	64.17	14.96	1.62	1.65	<0.01	0.003	0.030	0.033	*8.1*	2,177.00	227.7	1,144.1	1,397.0	325.7
341	New Haven, IN	Special Project FJO-935	MRC-150	5	Australia	66.74	7.48	5.02	0.85	<0.01	0.012	0.028	0.040	*8.3*	1,282.00	67.0	700.7	855.6	95.9
342	New Haven, IN	Special Project FJO-935	MRC-314	2	Australia	68.37	3.29	4.05	0.61	1.30	<0.001	0.004	0.004	*1.1*	406.00	9.3	227.3	277.6	13.4
343	New Haven, IN	Special Project FJO-935	MRC-151	6	Belgian Congo	71.39	9.15	0.40	0.48	<0.01	<0.001	0.021	0.021	*5.6*	1,270.00	81.2	742.5	906.7	116.2
344	New Haven, IN	Special Project FJO-935	MRC-219	21	Brazil	67.78	11.16	1.28	1.63	<0.01	0.004	0.028	0.032	*7.7*	4,311.00	336.3	2,393.0	2,922.0	481.1
345	New Haven, IN	Special Project FJO-935	MRC-265	22	Brazil	66.67	11.51	1.59	1.70	<0.01	0.003	0.034	0.037	*9.2*	4,386.00	352.9	2,394.8	2,924.1	504.8
346	New Haven, IN	Special Project FJO-935	MRC-267	15	Brazil	66.35	11.24	1.66	1.78	<0.01	0.003	0.032	0.035	*8.7*	4,395.00	345.3	2,388.2	2,916.1	494.0
347	New Haven, IN	Special Project FJO-935	MRC-268	15	Brazil	66.66	11.30	1.75	1.75	<0.01	0.005	0.035	0.040	*9.6*	4,380.00	346.0	2,391.1	2,919.7	494.9
348	New Haven, IN	Special Project FJO-935	MRC-282	3	Nigeria	41.91	36.61	3.70	0.60	<0.01	0.004	0.028	0.032	*7.7*	739.00	189.1	253.6	309.7	270.5
349	New Haven, IN	Special Project FJO-935	MRC-91	95	Liquido Brazil	67.18	13.12	0.91	1.53	<0.01	0.008	0.035	0.043	*9.8*	28,340.00	2,599.2	15,592.0	19,038.8	3,718.2
350	New Haven, IN	Special Project FJO-935	MRC-245	15	Brazil	68.76	10.12	1.07	1.58	<0.01	0.003	0.029	0.032	*7.9*	4,504.00	318.6	2,536.3	3,097.0	455.8
351	New Haven, IN	Special Project FJO-935	GEO-832	16	Belgian Congo	45.06	22.07	2.63	1.06	<0.01	0.001	0.036	0.037	*9.5*	3,090.00	476.7	1,140.3	1,392.4	682.0
352	New Haven, IN	Special Project FJO-935	MRC-218	22	Brazil	67.87	11.34	1.29	1.65	<0.01	0.003	0.031	0.034	*8.4*	4,380.00	347.2	2,434.5	2,972.7	496.7
353	New Haven, IN	Special Project FJO-935	MRC-251	12	Australia	63.83	12.37	4.41	0.56	<0.01	0.014	0.032	0.046	*9.5*	2,470.00	213.6	1,291.2	1,576.6	305.5
354	New Haven, IN	Special Project FJO-935	MRC-359	12	Nigeria	64.16	13.56	5.21	0.77	<0.01	0.028	0.014	0.042	*6.0*	2,303.00	218.3	1,210.1	1,477.6	312.3
355	New Haven, IN	Special Project FJO-935	MRC-305	2	Unknown	50.50	26.23	3.39	1.10	<0.01	0.012	0.020	0.032	*6.2*	411.00	75.4	170.0	207.6	107.8
356	New Haven, IN	Special Project FJO-935	MRC-244	21	Unknown	67.91	11.19	1.11	1.48	<0.01	0.005	0.026	0.031	*7.2*	4,247.00	332.2	2,362.0	2,884.1	475.2
357	New Haven, IN	Special Project FJO-935	MRC-164	2	Nigeria	62.88	9.84	7.96	3.47	<0.01	0.003	0.017	0.020	*4.7*	486.00	33.4	250.3	305.6	47.8
358	New Haven, IN	Special Project FJO-935	MRC-295	12	Belgian Congo	62.02	8.47	1.34	1.90	<0.01	0.004	0.020	0.024	*5.6*	2,400.00	142.1	1,219.0	1,488.5	203.3
359	New Haven, IN	Special Project FJO-935	GEO-831	15	Belgian Congo	46.49	20.68	3.11	0.96	<0.01	0.002	0.029	0.031	*7.8*	3,007.00	434.7	1,144.9	1,398.0	621.8
360	New Haven, IN	Special Project FJO-935	MRC-308	5	Uganda	43.77	10.34	<0.01	0.20	0.14	0.003	<0.001	0.003	*0.5*	1,005.00	72.6	360.3	439.9	103.9
361	New Haven, IN	Special Project FJO-935	MRC-144	5	Nigeria	60.81	12.78	8.59	1.19	<0.01	0.020	0.029	0.049	*9.2*	952.00	85.0	474.1	578.9	121.7
362	New Haven, IN	Special Project FJO-935	MRC-266	22	Brazil	67.42	10.82	1.58	1.70	<0.01	0.004	0.029	0.033	*7.9*	4,393.00	332.3	2,425.6	2,961.8	475.3
363	New Haven, IN	Special Project FJO-935	MRC-216	22	Brazil	67.69	11.09	1.19	1.57	<0.01	0.006	0.034	0.040	*9.4*	4,426.00	343.1	2,453.6	2,996.0	490.8
364	New Haven, IN	Special Project FJO-935	MRC-300	2	Australia	42.10	10.73	<0.01	0.27	0.15	0.003	<0.001	0.003	*0.5*	311.00	23.3	107.2	130.9	33.4
365	New Haven, IN	Special Project FJO-935	MRC-352	9	Unknown	42.46	34.86	2.91	0.32	<0.01	0.005	0.026	0.031	*7.2*	1,824.00	444.5	634.3	774.5	635.8
366	New Haven, IN	Special Project FJO-935	MRC-176	11	Liquido Brazil	66.50	13.22	1.12	1.43	<0.01	0.009	0.034	0.043	*9.7*	2,158.00	199.4	1,175.3	1,435.1	285.3
367	New Haven, IN	Special Project FJO-935	MRC-353	6	Unknown	50.19	23.63	1.02	0.44	<0.01	0.007	0.012	0.019	*3.7*	1,235.00	204.0	507.6	619.8	291.8
368	New Haven, IN	Special Project FJO-935	MRC-348	2	Unknown	51.87	24.68	0.56	0.47	<0.01	0.005	0.030	0.035	*8.3*	314.00	54.2	133.4	162.9	77.5
369	New Haven, IN	Special Project FJO-935	MRC-296	7	Belgian Congo	42.87	15.58	0.77	0.53	<0.01	0.002	0.017	0.019	*4.6*	1,369.00	149.1	480.6	586.9	213.3
370	New Haven, IN	Special Project FJO-935	MRC-92	8	Unknown	68.01	3.64	6.35	0.73	1.45	<0.001	0.003	0.003	*0.9*	1,604.00	40.8	893.4	1,090.9	58.4
371	New Haven, IN	GS-OOP-D 18002	1146A	40	Brazil	68.04	10.51	1.60	2.01	<0.01	0.008	0.025	0.033	*7.2*	4,326.00	317.8	2,410.5	2,943.4	454.7
372	New Haven, IN	GS-OOP-D 18002	1146E	50	Brazil	69.30	9.82	1.63	1.86	<0.01	0.008	0.022	0.030	*6.4*	5,493.00	377.1	3,117.5	3,806.6	539.4
373	New Haven, IN	GS-OOP-D 18002	1146	40	Brazil	67.59	10.34	1.67	2.23	<0.01	0.009	0.031	0.040	*8.9*	4,407.00	318.5	2,439.4	2,978.7	455.7
374	New Haven, IN	GS-OOP-D 18002	1146F	50	Brazil	68.24	10.29	2.60	1.54	<0.01	0.005	0.022	0.027	*6.2*	5,485.00	394.5	3,065.3	3,743.0	564.4
375	New Haven, IN	GS-OOP-D 18002	1146G	60	Brazil	69.06	9.74	1.92	1.89	<0.01	0.006	0.023	0.029	*6.5*	6,618.00	450.6	3,743.0	4,570.4	644.6
376	New Haven, IN	GS-OOP-D 18002	1146C	40	Brazil	67.88	10.88	1.63	1.81	<0.01	0.009	0.027	0.036	*7.8*	4,395.00	334.3	2,443.2	2,983.3	478.2
377	New Haven, IN	GS-OOP-3148-1F	2272	8	Malaya	50.97	25.33	4.72	1.48	0.09	0.009	0.011	0.020	*3.6*	2,026.00	358.7	845.7	1,032.7	513.2
378	New Haven, IN	GS-OOP-3508-1F SCM	2329	3	Australia	51.58	24.59	5.98	1.30	0.11	0.007	0.010	0.017	*3.2*	715.00	122.9	302.0	368.8	175.8
379	New Haven, IN	GS-OOP-3927-1F	207	7	Belgian Congo	55.71	11.75	0.72	3.25	<0.01	0.026	0.021	0.047	*2.4*	1,699.00	139.6	775.2	946.5	199.6
380	New Haven, IN	GS-OOP-10716 SCM	MGK-199	24	Unknown	85.80	2.26	0.06	1.72	<0.01	<0.001	0.001	0.001	*0.3*	13,268.00	209.6	9,323.0	11,383.9	299.9
381	New Haven, IN	Special Project FJO-935	MRC-280	3	De Staffany Canada	36.33	35.10	0.46	0.30	<0.01	0.001	0.024	0.025	*6.4*	650.00	159.5	193.4	236.1	228.2
382	New Haven, IN	Special Project FJO-935	GEO-822C	13	Belgian Congo	52.76	21.80	2.19	0.52	<0.01	0.001	0.032	0.033	*8.5*	2,443.00	372.3	1,055.6	1,288.9	532.6
383	New Haven, IN	Relocation Project DMO-00001	0021980001	4	Unknown	55.14	22.95	2.16	1.20	<0.01	0.006	0.029	0.035	*8.1*	1,771.00	284.1	799.7	976.5	406.4
															162,677.00	**14,230.2**	**87,212.7**	**106,492.1**	**20,356.8**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 1 - Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
384	Scotia, NY	GS-OOP-3954	B-065	02	Belgian Congo	25.68	29.20	5.69	4.26	<0.01	0.008	0.050	**0.058**	*13.8*	1,600.00	326.6	336.5	410.9	467.2
385	Scotia, NY	GS-OOP-3904	B-066	02	Belgian Congo	25.00	44.28	1.52	1.02	<0.01	0.031	0.087	**0.118**	*25.0*	1,600.00	495.3	327.6	400.0	708.5
386	Scotia, NY	GS-OOP-3904	B-076	03	Belgian Congo	33.86	39.68	1.12	1.06	<0.01	0.006	0.054	**0.060**	*15.0*	2,400.00	665.7	665.5	812.6	952.3
387	Scotia, NY	GS-OOP-10033	B-181	03	Brazil	31.02	42.70	4.53	1.07	<0.01	0.064	0.138	**0.202**	*41.5*	2,700.00	805.9	685.9	837.5	1,152.9
388	Scotia, NY	GS-OOP-3904	B-203	04	Belgian Congo	34.00	44.61	0.53	1.12	<0.01	0.008	0.060	**0.068**	*16.4*	3,600.00	1,122.6	1,002.4	1,224.0	1,606.0
389	Scotia, NY	GS-OOP-3904	B-286	04	Belgian Congo	27.10	48.94	0.86	0.64	<0.01	0.010	0.059	**0.069**	*16.0*	3,400.00	1,163.2	754.6	921.4	1,664.0
390	Scotia, NY	GS-OOP-3904	B-352	03	Belgian Congo	35.39	40.28	1.00	0.79	<0.01	0.003	0.052	**0.055**	*13.9*	2,700.00	760.2	782.5	955.5	1,087.6
391	Scotia, NY	GS-OOP-10048	B-367	02	Unknown	31.06	44.09	1.53	1.08	<0.01	0.005	0.141	**0.146**	*37.4*	1,800.00	554.8	457.9	559.1	793.6
392	Scotia, NY	GS-OOP-3904	B-419	04	Belgian Congo	29.94	42.88	1.20	0.74	<0.01	0.009	0.081	**0.090**	*22.0*	3,600.00	1,079.1	882.7	1,077.8	1,543.7
393	Scotia, NY	GS-OOP-3904	B-440	04	Belgian Congo	33.68	40.51	0.47	3.50	<0.01	0.067	0.124	**0.191**	*38.0*	3,600.00	1,019.5	993.0	1,212.5	1,458.4
394	Scotia, NY	GS-OOP-3904	B-470	02	Belgian Congo	23.77	54.45	0.78	0.60	<0.01	0.002	0.080	**0.082**	*21.0*	1,700.00	647.1	330.9	404.1	925.7
395	Scotia, NY	GS-OOP-3904	B-471	02	Belgian Congo	27.74	45.80	0.76	0.70	<0.01	0.014	0.090	**0.104**	*24.8*	1,700.00	544.3	386.2	471.6	778.6
396	Scotia, NY	GS-OOP-3904	B-473	03	Belgian Congo	29.80	48.78	0.62	0.46	<0.01	0.007	0.064	**0.071**	*17.4*	2,700.00	920.7	658.9	804.6	1,317.1
397	Scotia, NY	GS-OOP-3904	B-501	03	Belgian Congo	35.96	38.82	1.26	0.66	<0.01	0.006	0.047	**0.053**	*13.0*	2,700.00	732.7	795.1	970.9	1,048.1
398	Scotia, NY	GS-OOP-7212	B-536	2	South Africa	30.46	42.54	1.41	3.63	<0.01	0.080	0.284	**0.364**	*81.1*	1,800.00	535.3	449.0	548.3	765.7
399	Scotia, NY	GS-OOP-10043	B-542	01	Unknown	35.04	37.75	2.48	1.74	<0.01	0.012	0.350	**0.362**	***92.9***	800.00	211.1	229.6	280.3	302.0
400	Scotia, NY	GS-OOP-7413	B-556	02	South Africa	33.04	38.48	1.88	2.46	<0.01	0.031	0.134	**0.165**	*37.7*	1,800.00	484.2	487.1	594.7	692.6
401	Scotia, NY	GS-OOP-3904	B-010	06	Belgian Congo	32.38	43.76	0.94	0.60	<0.01	0.006	0.048	**0.054**	*13.0*	5,400.00	1,651.9	1,432.0	1,748.5	2,363.0
402	Scotia, NY	GS-OOP-3066	B-091	10	Africa	33.63	38.05	3.20	3.10	<0.01	0.008	0.050	**0.058**	*13.8*	8,000.00	2,127.9	2,203.3	2,690.4	3,044.0
403	Scotia, NY	GS-OOP-3904	B-141	03	Belgian Congo	35.11	37.87	1.22	0.55	<0.01	0.006	0.050	**0.056**	*13.6*	2,400.00	635.3	690.1	842.6	908.9
404	Scotia, NY	GS-OOP-3904	B-349	03	Belgian Congo	35.46	39.96	1.24	0.84	<0.01	0.004	0.052	**0.056**	*14.0*	2,700.00	754.2	784.1	957.4	1,078.9
405	Scotia, NY	GS-OOP-10033	B-359	04	Portugal	34.34	37.66	2.47	3.36	<0.01	0.003	0.132	**0.135**	*34.9*	3,600.00	947.7	1,012.4	1,236.2	1,355.8
406	Scotia, NY	GS-OOP-10033	B-374	06	Portugal	32.47	31.44	2.84	4.80	<0.01	0.019	0.083	**0.102**	*25.0*	5,400.00	1,186.8	1,435.9	1,753.4	1,697.8
407	Scotia, NY	GS-OOP-3904	B-417	07	Belgian Congo	26.92	46.24	0.84	0.72	<0.01	0.008	0.048	**0.056**	*13.3*	5,950.00	1,923.3	1,311.8	1,601.7	2,751.3
408	Scotia, NY	GS-OOP-3904	B-420	03	Belgian Congo	31.28	39.06	1.02	0.72	<0.01	0.017	0.048	**0.065**	*14.0*	2,700.00	737.2	691.7	844.6	1,054.6
409	Scotia, NY	GS-OOP-7430	B-455	05	Brazil	28.03	46.94	2.36	1.16	<0.01	0.005	0.085	**0.090**	*22.7*	4,500.00	1,476.6	1,033.0	1,261.4	2,112.3
410	Scotia, NY	GS-OOP-3904	B-468	09	Belgian Congo	32.39	43.80	0.54	1.07	<0.01	0.005	0.086	**0.091**	*23.0*	8,100.00	2,480.1	2,148.6	2,623.6	3,547.8
411	Scotia, NY	GS-OOP-10033	B-492	07	Mozambique	32.80	46.32	0.14	1.33	<0.01	0.033	0.134	**0.167**	*37.9*	6,300.00	2,039.9	1,692.3	2,066.4	2,918.2
412	Scotia, NY	GS-OOP-3904	B-494	02	Belgian Congo	34.92	39.30	1.04	0.78	<0.01	0.005	0.047	**0.052**	*12.8*	1,800.00	494.5	514.8	628.6	707.4
413	Scotia, NY	GS-OOP-3904	B-495	03	Belgian Congo	30.12	43.36	1.08	0.67	<0.01	0.008	0.058	**0.066**	*16.0*	2,700.00	818.4	666.0	813.2	1,170.7
414	Scotia, NY	GS-OOP-3904	B-500	05	Belgian Congo	33.50	40.71	1.00	0.47	<0.01	0.011	0.048	**0.059**	*13.5*	4,250.00	1,209.5	1,166.0	1,423.8	1,730.2
415	Scotia, NY	GS-OOP-2426	B-509	14	Belgian Congo	35.12	44.22	0.88	0.43	<0.01	0.078	0.282	**0.360**	***80.4***	11,900.00	3,678.5	3,422.7	4,179.3	5,262.2
416	Scotia, NY	GS-OOP-3069	B-331	01	Unknown	34.86	37.72	5.20	0.52	<0.01	0.024	0.108	**0.132**	*30.3*	850.00	224.1	242.7	296.3	320.6
417	Scotia, NY	GS-OOP-3904	B-491	2	Belgian Congo	44.34	26.12	0.90	1.25	<0.01	0.012	0.053	**0.065**	*14.9*	1,700.00	310.4	617.3	753.8	444.0
418	Scotia, NY	GS-OOP-3904	B-039	10	Belgian Congo	28.30	45.56	0.86	0.70	<0.01	0.014	0.047	**0.061**	*13.0*	8,000.00	2,547.9	1,854.1	2,264.0	3,644.8
419	Scotia, NY	GS-OOP-3904	B-047	02	Belgian Congo	26.01	48.21	0.88	0.62	<0.01	0.006	0.076	**0.082**	*20.0*	1,600.00	539.2	340.8	416.2	771.4
420	Scotia, NY	GS-OOP-3904	B-072	06	Belgian Congo	34.16	42.58	0.50	1.56	<0.01	0.012	0.074	**0.086**	*20.0*	4,800.00	1,428.7	1,342.8	1,639.7	2,043.8
421	Scotia, NY	GS-OOP-3904	B-150	07	Belgian Congo	34.08	40.22	1.02	0.48	<0.01	0.008	0.046	**0.054**	*13.0*	5,600.00	1,574.5	1,563.0	1,908.5	2,252.3
422	Scotia, NY	GS-OOP-3904	B-192	18	Belgian Congo	27.48	46.78	0.58	2.09	<0.01	0.012	0.067	**0.079**	*19.0*	16,200.00	5,297.6	3,645.8	4,451.8	7,578.4
423	Scotia, NY	GS-OOP-3904	B-193	10	Belgian Congo	28.78	45.09	0.54	1.14	<0.01	0.005	0.088	**0.093**	*23.5*	9,000.00	2,836.8	2,121.3	2,590.2	4,058.1
424	Scotia, NY	GS-OOP-3904	B-211	11	Belgian Congo	30.60	41.71	0.78	4.50	<0.01	0.050	0.107	**0.157**	*32.0*	9,900.00	2,886.5	2,481.0	3,029.4	4,129.3
425	Scotia, NY	GS-OOP-3456	B-257	24	Portugal	25.70	27.44	4.71	3.68	<0.01	0.058	0.083	**0.141**	*26.5*	21,600.00	4,143.2	4,546.2	5,551.2	5,927.0
426	Scotia, NY	GS-OOP-7375	B-271	02	Mozambique	27.01	53.42	0.06	0.81	<0.01	0.003	0.053	**0.056**	*14.2*	1,800.00	672.2	398.2	486.2	961.6
427	Scotia, NY	GS-OOP-3904	B-309	09	Belgian Congo	35.14	38.66	1.05	0.52	<0.01	0.006	0.048	**0.054**	*13.1*	7,650.00	2,067.4	2,201.5	2,688.2	2,957.5
428	Scotia, NY	GS-OOP-3894	B-315	22	Portugal	29.07	31.73	2.70	7.22	<0.01	0.061	0.097	**0.158**	*30.0*	19,800.00	4,391.7	4,713.8	5,755.9	6,282.5
429	Scotia, NY	GS-OOP-7376	B-360	10	Belgian Congo	34.39	35.41	0.92	2.01	<0.01	0.012	0.047	**0.059**	*13.3*	9,000.00	2,227.8	2,534.8	3,095.1	3,186.9
430	Scotia, NY	GS-OOP-3904	B-366	03	Belgian Congo	31.52	42.40	0.86	1.00	<0.01	0.004	0.054	**0.058**	*14.5*	2,700.00	800.3	697.0	851.0	1,144.8
431	Scotia, NY	GS-OOP-3904	B-378	03	Belgian Congo	32.72	40.06	1.11	0.74	<0.01	0.011	0.077	**0.088**	*21.1*	2,550.00	714.1	683.3	834.4	1,021.5
432	Scotia, NY	GS-OOP-10043	B-391	03	Br. Malaya	24.82	48.34	3.36	1.96	<0.01	0.015	0.062	**0.077**	*18.0*	2,700.00	912.4	548.8	670.1	1,305.2
433	Scotia, NY	GS-OOP-3894	B-487	24	Portugal	28.92	31.88	6.25	5.59	<0.01	0.020	0.088	**0.108**	*24.7*	21,600.00	4,813.6	5,115.8	6,246.7	6,886.1
434	Scotia, NY	GS-OOP-3904	B-502	09	Belgian Congo	29.93	44.10	0.94	0.64	<0.01	0.014	0.059	**0.073**	*17.0*	8,100.00	2,497.0	1,985.4	2,424.3	3,572.1
435	Scotia, NY	GS-OOP-3177	B-529	19	Belgian Congo	33.40	37.38	3.62	3.13	<0.01	0.006	0.050	**0.056**	*13.6*	16,150.00	4,220.0	4,417.6	5,394.1	6,036.9
436	Scotia, NY	GS-OOP-3904	B-004	11	Belgian Congo	26.40	47.18	0.96	1.36	<0.01	0.008	0.075	**0.083**	*20.4*	9,900.00	3,265.1	2,140.4	2,613.6	4,670.8
437	Scotia, NY	GS-OOP-10257	B-056	08	Mozambique	25.96	53.94	0.04	0.52	<0.01	0.104	0.043	**0.147**	*19.8*	6,400.00	2,413.2	1,360.7	1,661.4	3,452.2
438	Scotia, NY	GS-OOP-3904	B-180	24	Belgian Congo	34.44	35.15	5.54	2.62	<0.01	0.010	0.058	**0.068**	*16.1*	21,600.00	5,307.4	6,092.3	7,439.0	7,592.4
439	Scotia, NY	GS-OOP-3904	B-194	24	Belgian Congo	33.50	36.07	3.76	3.72	<0.01	0.010	0.057	**0.067**	*16.0*	21,600.00	5,446.3	5,926.0	7,236.0	7,791.1
440	Scotia, NY	GS-OOP-3904	B-217	24	Belgian Congo	34.43	37.62	3.63	2.60	<0.01	0.006	0.054	**0.060**	*14.7*	21,600.00	5,680.3	6,090.5	7,436.9	8,125.9
441	Scotia, NY	GS-OOP-3904	B-224	24	Belgian Congo	34.66	35.63	6.02	1.80	<0.01	0.014	0.060	**0.074**	*16.9*	21,600.00	5,379.9	6,131.2	7,486.6	7,696.1
442	Scotia, NY	GS-OOP-3904	B-245	24	Belgian Congo	34.20	39.08	4.32	1.48	<0.01	0.003	0.057	**0.060**	*15.2*	21,600.00	5,900.8	6,049.8	7,387.2	8,441.3
443	Scotia, NY	GS-OOP-3904	B-249	24	Belgian Congo	34.52	38.14	5.25	1.25	<0.01	0.005	0.059	**0.064**	*16.0*	21,600.00	5,758.9	6,106.4	7,456.3	8,238.2
444	Scotia, NY	GS-OOP-7243	B-269	10	Belgian Congo	34.46	38.88	1.13	2.15	<0.01	0.017	0.073	**0.090**	*20.6*	8,500.00	2,310.2	2,398.8	2,929.1	3,304.8
445	Scotia, NY	GS-OOP-3904	B-299	25	Belgian Congo	35.44	36.96	4.89	1.47	<0.01	0.004	0.059	**0.063**	*16.0*	21,250.00	5,490.3	6,167.6	7,531.0	7,854.0
446	Scotia, NY	GS-OOP-10033	B-371	06	Brazil	19.48	55.56	3.50	1.48	<0.01	0.022	0.243	**0.265**	*65.6*	5,400.00	2,097.3	861.5	1,051.9	3,000.2
															468,250.00	**128,384.8**	**121,806.4**	**148,733.0**	**183,658.7**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 2 - Tantalum Minerals More Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Contract Number	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
						Percent (%) by Weight													
447	Scotia, NY	GS-OOP-7073	B-200	03	Belgian Congo	30.52	47.69	1.22	0.49	<0.01	0.005	0.032	0.037	*8.8*	2,700.00	900.1	674.9	824.0	1,287.6
448	Scotia, NY	GS-OOP-2849	B-524	02	Unknown	26.02	27.58	3.95	10.66	<0.01	0.012	0.028	0.040	*8.3*	1,600.00	308.5	340.9	416.3	441.3
449	Scotia, NY	GS-OOP-3747	B-231	07	Belgian Congo	26.26	49.38	0.50	1.25	<0.01	0.003	0.028	0.031	*7.6*	6,300.00	2,174.7	1,354.9	1,654.4	3,110.9
450	Scotia, NY	GS-OOP-3417	B-234	10	Belgian Congo	23.88	55.12	0.28	0.31	<0.01	0.002	0.031	0.033	*8.3*	9,000.00	3,467.8	1,760.1	2,149.2	4,960.8
451	Scotia, NY	GS-OOP-3904	B-431	06	Belgian Congo	27.76	48.14	0.90	0.66	<0.01	0.004	0.036	0.040	*9.8*	5,400.00	1,817.2	1,227.7	1,499.0	2,599.6
452	Scotia, NY	GS-OOP-3904	B-258	01	Belgian Congo	43.16	36.46	0.25	0.42	<0.01	0.002	0.020	0.022	*5.4*	900.00	229.4	318.1	388.4	328.1
453	Scotia, NY	GS-OOP-3904	B-014	06	Belgian Congo	21.98	57.66	0.32	0.30	<0.01	<0.001	0.024	0.024	*6.4*	5,400.00	2,176.6	972.0	1,186.9	3,113.6
454	Scotia, NY	GS-OOP-3747	B-233	20	Africa	36.56	39.88	1.20	0.34	<0.01	0.007	0.031	0.038	*8.7*	17,000.00	4,739.2	5,090.0	6,215.2	6,779.6
															48,300.00	**15,813.4**	**11,738.6**	**14,333.5**	**22,621.6**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 1 - Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

E. Tantalum/Columbium Concentrates:

Item No.	Storage Location	Lot Number	No. of Units	Country of Origin	Ta_2O_5	Cb_2O_5	SnO_2	TiO_2	Sb	Th	U	[Th+U]	*Bq/g*	Bulk Weight (Pounds)	Cb (Pounds)	Ta (Pounds)	Ta_2O_5 (Pounds)	Cb_2O_5 (Pounds)
					Percent (%) by Weight													
455	Warren, OH	096	98	Unknown	32.19	29.48	0.09	4.72	<0.01	0.001	0.003	0.004	*0.9*	68,599.00	14,136.7	18,084.3	22,082.0	20,223.0
456	Warren, OH	097	78	Unknown	32.28	29.25	0.09	4.74	<0.01	0.002	0.003	0.005	*1.0*	61,599.00	12,595.1	16,284.3	19,884.2	18,017.7
457	Warren, OH	098	128	Unknown	31.70	29.54	0.07	4.33	<0.01	0.002	0.003	0.005	*1.0*	89,599.00	18,501.9	23,260.8	28,402.9	26,467.5
458	Warren, OH	099	128	Unknown	30.45	26.35	0.14	5.60	<0.01	0.002	0.002	0.004	*0.7*	89,599.00	16,503.9	22,343.6	27,282.9	23,609.3
459	Warren, OH	100	128	Unknown	30.11	26.59	0.08	5.13	<0.01	0.003	0.002	0.005	*0.8*	89,599.00	16,654.2	22,094.1	26,978.3	23,824.4
460	Warren, OH	101	128	Unknown	30.65	26.53	0.10	5.30	<0.01	0.002	0.002	0.004	*0.7*	89,599.00	16,616.6	22,490.4	27,462.1	23,770.6
461	Warren, OH	102	128	Unknown	29.33	25.60	0.16	5.35	<0.01	0.001	0.003	0.004	*0.9*	89,599.00	16,034.1	21,521.8	26,279.4	22,937.3
462	Warren, OH	106	128	Unknown	30.88	26.49	0.12	5.34	<0.01	0.001	0.001	0.002	*0.3*	89,599.00	16,591.6	22,659.1	27,668.2	23,734.8
463	Warren, OH	107	128	Unknown	31.95	27.78	0.10	5.40	<0.01	0.001	0.002	0.003	*0.6*	89,599.00	17,399.5	23,444.3	28,626.9	24,890.6
464	Warren, OH	109	128	Unknown	31.58	27.69	0.12	5.40	<0.01	0.002	0.001	0.003	*0.4*	89,599.00	17,343.2	23,172.8	28,295.4	24,810.0
465	Warren, OH	110	128	Unknown	30.40	26.33	0.11	5.24	<0.01	0.003	0.002	0.005	*0.8*	89,599.00	16,491.3	22,306.9	27,238.1	23,591.4
466	Warren, OH	111	128	Unknown	30.35	26.26	0.12	5.40	<0.01	0.002	0.002	0.004	*0.7*	89,599.00	16,447.5	22,270.2	27,193.3	23,528.7
467	Warren, OH	112	128	Unknown	30.25	25.07	0.09	5.74	<0.01	0.002	0.002	0.004	*0.7*	89,599.00	15,702.2	22,196.8	27,103.7	22,462.5
468	Warren, OH	113	128	Unknown	31.07	26.32	0.14	5.15	<0.01	0.001	0.001	0.002	*0.3*	89,599.00	16,485.1	22,798.5	27,838.4	23,582.5
469	Warren, OH	115	128	Unknown	31.90	25.63	0.12	5.83	<0.01	0.001	0.002	0.003	*0.6*	89,599.00	16,052.9	23,407.6	28,582.1	22,964.2
470	Warren, OH	117	128	Unknown	30.42	26.48	0.11	6.14	<0.01	0.002	0.002	0.004	*0.7*	89,599.00	16,585.3	22,321.6	27,256.0	23,725.8
471	Warren, OH	118	128	Unknown	30.71	26.08	0.12	5.98	<0.01	0.001	0.003	0.004	*0.9*	89,599.00	16,334.8	22,534.4	27,515.9	23,367.4
472	Warren, OH	119	128	Unknown	29.89	25.81	0.20	6.14	<0.01	0.002	0.002	0.004	*0.7*	89,599.00	16,165.7	21,932.7	26,781.1	23,125.5
473	Warren, OH	120	128	Unknown	29.45	26.31	0.10	5.60	<0.01	0.003	0.001	0.004	*0.5*	89,599.00	16,478.8	21,609.8	26,386.9	23,573.5
474	Warren, OH	121	128	Unknown	31.07	26.47	0.08	5.91	<0.01	0.001	0.003	0.004	*0.9*	89,599.00	16,579.0	22,798.5	27,838.4	23,716.9
475	Warren, OH	122	128	Unknown	29.73	26.46	0.12	5.57	<0.01	<0.001	0.004	0.004	*1.1*	89,599.00	16,572.8	21,815.3	26,637.8	23,707.9
476	Warren, OH	126	128	Unknown	29.76	26.55	0.08	6.52	<0.01	<0.001	0.002	0.002	*0.6*	89,599.00	16,629.1	21,837.3	26,664.7	23,788.5
477	Warren, OH	127	128	Unknown	29.04	27.19	0.11	6.91	<0.01	0.001	0.002	0.003	*0.6*	89,599.00	17,030.0	21,309.0	26,019.5	24,362.0
478	Warren, OH	128	128	Unknown	28.90	26.80	0.13	6.43	<0.01	0.002	0.001	0.003	*0.4*	89,599.00	16,785.7	21,206.2	25,894.1	24,012.5
479	Warren, OH	129	128	Unknown	30.34	27.21	0.06	6.83	<0.01	<0.001	0.002	0.002	*0.6*	89,599.00	17,042.5	22,262.9	27,184.3	24,379.9
480	Warren, OH	130	128	Unknown	29.40	25.76	0.10	6.56	<0.01	0.001	0.002	0.003	*0.6*	89,599.00	16,134.3	21,573.1	26,342.1	23,080.7
														2,280,574.00	**425,893.7**	**569,536.4**	**695,438.6**	**609,255.1**

NOTE A: The analysis results included in this Subsection J.1 are for *informational purpose only*. See Subsection A.2., paragraph b.
NOTE B: These items are Category 1 - Tantalum Minerals Less Than 0.05% Combined Thorium and Uranium
NOTE C: Activity is based on chemical analyses and 49 CFR 173.345 values for natural U and natural Th.

Tantalum/Columbium Concentrates Particle Size Chart

Location	Country of Origin	Particle Description	Packaging Remarks
Binghamton, NY	Belgian Congo	1/8" to 3/4" coarse irregular 'chunks	Packaged in burlap bags stored inside of drums.
	Portugal	1/8" to 3/4" coarse irregular 'chunks	Packaged in burlap bags stored inside of drums.
	Unknown	1/8" to 3/4" coarse irregular 'chunks	Packaged in burlap bags stored inside of drums.
New Haven, IN	Belgian Congo	1/4" to fine powder	8 or 15 gallon drums
	Brazil	1/4" to fine powder	8 or 15 gallon drums
	Germany	Fine powder	8 gallon wooden kegs
	Australia	1/2" to fine powder	8 gallon drums
	Nigeria	1/2" to fine powder	8 or 15 gallon drums
	India	1/4" to fine powder	15 gallon drums
	Rhodesia	1/4" to fine powder	15 or 20 gallon drums
	Liquido Brazil	1/4" to fine powder	8 or 20 gallon drums
	Uganda	1" or 3/4" or 1/2" or 1/4" to fine powder	8 gallon drums
	Great Britain	Fine powder	20 gallon drums
	American	Fine powder	10 gallon drums
	Unknown	1/4" to fine powder	8 or 15 or 30 or 35 or 55 gallon drums
Scotia, NY	Belgian Congo	1/8" to 3/4" coarse irregular 'chunks	Packaged in burlap bags stored inside of drums.
	Brazil	1"x 1" to 3"x 3" coarse irregular 'chunks'	Packaged in burlap bags stored inside of drums.
	Portugal	1"x 1" to 3"x 3" coarse irregular 'chunks'	Packaged in burlap bags stored inside of drums.
	British Malaya	1"x 2" coarse irregular 'chunks'	Packaged in burlap bags stored inside of drums.
	Mozambique	1/4" or 1/8" coarse irregular 'chunks'	Packaged in burlap bags stored inside of drums.
	South Africa	1/8" to 1-1/2" coarse irregular 'chunks'	Packaged in burlap bags stored inside of drums.
	Unknown	1/8" to 1"x 3" coarse irregular 'chunks'	Packaged in burlap bags stored inside of drums.
Warren, OH	Unknown	1/4" or 1/2" or 3/8" or 7/16" and less	30 gallon drums

CAVEAT: The particle description is based on visual inspection therefore the actual particle size may vary.

Storage Location: **Binghamton, NY**

Item No.	Lot/Ingot No.	(Nb%)	(O)	(N)	(C)	(S)	(P)	(Si)	(Zr)	(Al)	(Sb)	(As)	(Bi)	(B)	(Co)	(Pb)	(Ti)	(Mo)	(W)	(V)	(Ta)	(Mn)	(Zn)	(Ni)	(Fe)	(Cu)	(Cr)	(Ca)	(H)	(Mg)	(Sc)	(Ag)	(Te)	(Tl)	(Sn)
20	ECB 1061 R1	99.91	0.0067	0.0026	<0.0005	<0.0005	<0.0020	<0.0020	<0.0010	<0.0020	<0.0001	<0.0001	<0.0001	<0.0010	<0.0020	<0.0001	<0.0020	0.0082	<0.0200	<0.0020	<0.0200	<0.0020	<0.0020	<0.0020	<0.0020	<0.0010	<0.0020	<0.0010	<0.0001	<0.0010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
23	NB 73010-1	99.95	30	15	15	<10	15	10	<10	10	5	<1	<1	5	<5	<1	<5	20	<100	<5	300	<5	<25	5	20	<5	<5	<10	<5	<5	<1	1	<5	<5	<5
24	NB 73011-1	99.97	60	40	15	<10	10	10	<10	10	5	5	<1	5	<5	<1	<5	100	<100	<5	95	<5	<25	<5	<5	<5	<5	<5	15	<5	<1	1	<5	<5	<5
25	NB 73013-1	99.95	45	30	15	<10	33	10	<10	20	10	4	<1	<1	<5	1	<5	10	<100	<5	300	<5	<25	<5	10	<5	<5	<10	<5	<5	<1	1	<5	<5	<5
26	NB 73014-1	99.95	40	25	10	<10	15	15	<10	15	5	4	<1	5	<5	1	<5	25	<100	<5	270	<5	<25	5	15	<5	<5	<10	10	<5	<1	1	<5	<5	<5
27	NB 73015-1	99.94	80	30	<10	<10	7	10	<10	10	5	4	<1	5	<5	2	<5	35	<100	10	435	<5	<25	<5	10	<5	<5	<10	15	<5	<1	5	<5	<5	<5
28	NB 73016-1	99.96	65	25	10	<10	30	10	<10	10	5	4	<1	<1	<5	1	<5	10	<100	10	200	<5	<25	<5	25	<5	<5	<10	20	<5	<1	5	<5	<5	<5
30	NB 73018-1	99.96	20	35	<10	<10	9	10	<10	10	<5	4	<1	4	<5	<1	<5	30	<100	10	130	<5	<25	5	5	<5	<5	<10	20	<5	<1	3	<5	<5	<5
32	NB 73020-1	99.97	<10	15	<10	<10	16	20	15	15	<5	4	<1	5	<5	<1	<5	50	<100	<5	100	<5	<25	<5	25	<5	<5	<10	<5	<5	<1	1	<5	<5	<5
33	NB 73022-1	99.96	<10	20	15	<10	17	25	<10	15	5	4	<1	4	<5	<1	<5	20	<100	<5	200	<5	<25	<5	15	<5	<5	<10	10	<5	<1	1	<5	<5	<5
34	NB 73024-1	99.96	15	25	<10	<10	<5	20	<10	10	<5	4	<1	3	<5	<1	<5	20	<100	<5	270	<5	<25	<5	5	<5	<5	<10	<5	<5	<1	2	<5	<5	<5
36	NB 73033-1	99.95	50	15	20	<10	Not Detected	15	<10	10	5	4	<1	7	<5	5	<5	15	<100	<5	235	<5	<25	<5	20	10	<5	<10	<5	<5	<1	1	<5	<5	<5
38	NB 73035-1	99.96	<10	<10	15	<10	Not Detected	15	<10	30	5	4	<1	4	<5	3	<5	10	<100	10	135	<5	<25	<5	5	<5	<5	<10	<5	10	<1	3	<5	<5	<5
42	NB 73040-1	99.96	20	15	10	<10	7	10	<10	10	5	4	<1	4	<5	<1	10	15	<100	<5	165	<5	<25	<5	5	<5	<5	<10	<5	5	<1	1	<5	<5	<5
43	NB 73041-1	99.96	35	20	<10	<10	Not Detected	20	<10	10	5	4	<1	5	<5	<1	<5	20	<100	<5	170	<5	<25	<5	5	<5	<5	<10	<5	5	<1	4	<5	<5	<5
44	NB 73042-1	99.96	40	20	15	<10	8	25	<10	10	5	4	<1	4	<5	<1	<5	10	<100	<5	200	<5	<25	<5	10	<5	<5	<10	<5	5	<1	2	<5	<5	<5
45	NB 73060-1	99.95	35	<10	30	<10	<5	50	<10	<5	5	5	<1	10	<5	<1	<5	15	<100	<5	295	<5	<25	<5	<5	<5	<5	<10	<5	<5	<1	1	<5	<5	<5
46	NB 73062-1	99.91	40	15	50	<10	7	55	<10	15	5	4	<1	4	<5	1	10	20	<100	<5	670	10	<25	<5	10	<5	<5	<10	<5	<5	<1	2	<5	<5	<5
47	NB 73063-1	99.95	50	15	20	<10	7	15	<10	25	<5	4	<1	5	<5	<1	10	70	<100	<5	200	20	<25	10	10	<5	<5	<10	<5	<5	<1	1	<5	<5	<5
48	NB 73064-1	99.95	40	20	20	<10	49	62	<10	10	<5	4	<1	2	<5	<1	<5	25	<100	<5	165	<5	<25	<5	5	40	<5	<10	5	<5	<1	1	<5	<5	<5
49	NB 73067-1	99.96	40	15	35	<10	<5	20	<10	15	5	4	<1	5	<5	1	<5	30	<100	<5	165	<5	<25	<5	15	10	<5	<10	<5	5	<1	1	<5	<5	<5
55	NB 73077-1	99.97	80	25	30	<10	10	10	<10	25	5	<1	<1	3	<5	<1	<5	30	<100	<5	100	<5	<25	<5	10	<5	<5	<10	<5	<5	<1	<1	<5	<5	<5
57	NB 73079-1	99.97	65	20	25	<10	15	15	<10	<5	5	5	<1	<1	<5	1	<5	10	<100	<5	130	<5	<25	<5	25	10	<5	<5	<5	<5	<1	1	<5	<5	<5
58	NB 73081-1	99.97	50	20	10	<10	10	10	<10	<5	5	4	<1	<1	<5	1	<5	15	<100	<5	90	<5	<25	<5	<5	<5	<5	<10	10	<5	<1	1	<5	<5	<5
59	NB 73086-2	99.94	30	15	25	<10	9	25	15	15	5	4	<1	5	<5	<1	<5	75	<100	<5	235	<5	<25	10	15	15	10	<10	10	<5	<1	1.00	<5	<5	<5
60	NB 73119-3	99.93	55	<10	15	<10	<5	20	<10	15	5	5	<1	5	<5	<1	<5	<10	<100	<5	500	<5	<25	5	15	10	<5	<10	<5	5	<1	1.00	<5	<5	<5
66	NB 83947-2	99.93	45	25	10	<10	22	10	<10	<5	<5	<5	<1	5	<5	<1	<5	50	<100	<5	535	<5	<25	<5	<5	<5	<5	<10	<5	<5	<1	1	<5	<5	<5
70	NB 83955-2	99.91	15	<10	15	<10	5	15	<10	<5	<5	<5	<1	<1	<5	<1	<5	50	<100	<5	770	<5	<25	<5	10	<5	<5	<10	<5	<5	<1	5	<5	<5	<5
71	NB 83956-2	99.91	15	15	15	<10	10	20	<10	10	<5	<5	<1	<1	<5	<1	<5	50	<100	<5	735	<5	<25	<5	10	<5	<5	<10	<5	<5	<1	5	<5	<5	<5
72	NB 83957-2	99.9	25	15	15	<10	31	15	<10	20	<5	<5	<1	<1	<5	<1	<5	50	<100	<5	770	<5	<25	<5	5	10	<5	<10	<5	<5	<1	3	<5	<5	<5
73	NB 83961-2	99.91	35	<10	15	<10	22	10	25	10	<5	<5	<1	1	<5	<1	<5	50	<100	<5	670	5	<25	<5	20	<5	<5	<10	<5	<5	<1	5	<5	<5	<5
74	NB 83962-2	99.9	15	<10	15	<10	8	10	<10	5	5	<5	<1	<1	<5	<1	<5	50	100	<5	870	<5	<25	<5	<5	<5	<5	<10	<5	<5	<1	2	<5	<5	<5
75	NB 83963-2	99.91	15	10	15	<10	18	20	40	10	<5	<5	<1	<1	<5	2	<5	50	<100	<5	700	<5	<25	<5	30	<5	<5	<10	<5	<5	<1	1	<5	<5	<5

NOTES: Line Item 20 is domestically produced by H.C. Starck
The other preceding line items are domestically produced by Cabot Corporation and all results are in parts per million *(PPM)*

J.2 Storage Locations (MAY 03)

Storage locations and hours of operation for Tantalum and Columbium materials are:

Baton Rouge Depot
2695 N. Sherwood Forest Drive
Baton Rouge, LA 70814-5397
Attention: Ronnie Favors
Phone #: (225) 389-0280
Fax #: (225) 389-0280
Hours: 8:00 AM – 2:30 PM (M-F)

Binghamton Depot
Hoyt Avenue
Binghamton, NY 13901-1699
Attention: Bill Guiton
Phone #: (607) 773-2722
Fax #: (607) 773-2722
Hours: 7:00 AM – 3:00 PM (M-TH)
8:00 AM – 3:00 PM (F)

New Haven Depot
15411 Dawkins Rd.
New Haven, IN 46774-944
Attention: John Olszewski
Phone #: (260)749-9544
Fax #: (260)749-8467
Hours: 7:15 AM – 3:15 PM (M-TH)
8:00 AM – 3:00 PM (F)

Scotia Depot
Route 5, Bldg # 12
Scotia, NY 12302-9463
Attention: Dennis Wesolowski
Phone #: (518) 370-3347
Fax #: (518) 370-0323
Hours: 7:00 AM – 3:00 PM (M-TH)
8:00 AM – 3:00 PM (F)

Somerville Depot
152 U.S. Highway 206 South
Hillsborough, NJ 08844-4135
Attention: James Farley
Phone #: (908) 707-4356
Fax #: (908) 707-4350
Hours: 7:00 AM – 3:00 PM (M-TH)
8:00 AM -3:00 PM (F)

Warren Depot
Pine Street Extension
Warren, OH 44482-9999
Attention: Jack Pittano
Phone #: (330) 652-1456
Fax #: (330) 652-5167
Hours: 7:15 AM – 3:15 PM (M-TH)
8:15 AM – 3:15 PM (F)

See the **I.2** Shopping List(s) for the Storage Location applicable to an offered item. Mode of transportation for all Tantalum and Columbium materials at each location is **TRUCK.**

Operations Office:

Ms. Marva Gettis
Defense National Stockpile Center
Operations and Logistics Division
8725 John J Kingman Road, Suite 3229
Ft. Belvoir, VA 22060-6223
Phone #: (703) 767-7615
Fax #: (703) 767-7608

J.3 Shipping Instructions (JAN 95)

1. a. Company Name: _____

   b. Point of Contact: _____ c. Telephone No.: _____

2. a. DNSC Contract No.: SP0833-_____ b. Commodity: _____

3. Item: _____

4. Depot: _____

5. a. Quantity: _____ b. Unit Price: $_____

   c. Total Value: $_____

6. Shipping Method: _____

7. a. Carrier Name: _____

   b. Point of Contact: _____ c. Telephone No.: _____

8. Date Shipment Desired: _____

9. Ship To: _____

_____

_____

10. Remarks: _____

_____

_____

11. Authorized Personnel to Request Shipment of Material:

_____

Name (Printed) **Signature** **Date**

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J.4 Material Safety Data Sheets (OCT 02)

-SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

-

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
SUITE 3339
FORT BELVOIR, VA 22060-6223

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: TANTALUM

TRADE NAMES/SYNONYMS:
TANTALUM-181; TANTALUM POWDER; TA; DLA22420; RTECS WW5505000

CHEMICAL FAMILY: metal

CREATION DATE: Jul 01 1992
REVISION DATE: Jun 19 2001

-SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

-

COMPONENT: TANTALUM
CAS NUMBER: 7440-25-7
EC NUMBER (EINECS): 231-135-5
PERCENTAGE: 100

-SECTION 3 HAZARDS IDENTIFICATION

-

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0

EMERGENCY OVERVIEW:
PHYSICAL DESCRIPTION: Odorless, gray to bluish, hard, malleable, ductile metal or black powder. When polished the metal may be silver white.
MAJOR HEALTH HAZARDS: No significant target effects reported.
PHYSICAL HAZARDS: Extremely flammable. May ignite spontaneously on exposure to air. Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: lung damage
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
EYE CONTACT:
SHORT TERM EXPOSURE: mild irritation
LONG TERM EXPOSURE: no information on significant adverse effects
INGESTION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects

CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

-SECTION 4 FIRST AID MEASURES

-

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash exposed skin with soap and water.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

-SECTION 5 FIRE FIGHTING MEASURES

-

FIRE AND EXPLOSION HAZARDS: Negligible fire and explosion hazard in bulk form. Dust/air mixtures may ignite or explode. Finely divided material may ignite spontaneously. May ignite on exposure to air.

EXTINGUISHING MEDIA: dolomite, dry powder for metal fires, dry sand, graphite, soda ash, sodium chloride

Do not get water directly on material.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid nhalation of material or combustion by-products.

LOWER FLAMMABLE LIMIT: <0.2 g/L

-SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Small spills: Collect spilled material in appropriate container for disposal. Move containers away from spill to a safe area. Large spills: Wet down area with water. Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Clean up residue with a high-efficiency particulate filter vacuum.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Keep material wetted. Store in compatible containers. Store in a cool, dry place.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
TANTALUM:
TANTALUM METAL AND OXIDE DUSTS (as Ta):
5 mg/m3 OSHA TWA
5 mg/m3 ACGIH TWA
5 mg/m3 NIOSH recommended TWA 10 hour(s)
10 mg/m3 NIOSH recommended STEL
4 mg/m3 DFG MAK (inhalable dust fraction)
1.5 mg/m3 DFG MAK (respirable dust fraction)
5 mg/m3 UK OES TWA (metal)
10 mg/m3 UK OES STEL (metal)

MEASUREMENT METHOD: Particulate filter; Gravimetric; NIOSH IV # 0500, Nuisance Dust (total)

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Protective clothing is not required.

GLOVES: Protective gloves are not required, but recommended.

RESPIRATOR: The following respirators and maximum use concentrations are drawn
from NIOSH and/or OSHA.
Measurement Element:
Tantalum (Ta)
25 mg/m3
Any dust and mist respirator.
50 mg/m3
Any dust and mist respirator except single-use and quarter-mask respirators.
Any dust, mist, and fume respirator.
Any supplied-air respirator.
125 mg/m3
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with a dust and mist filter.
250 mg/m3
Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.
Any supplied-air respirator with a tight-fitting facepiece that is operated

in a continuous-flow mode.
Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.

2500 mg/m3

Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.
Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Odorless, gray to bluish, hard, malleable, ductile metal or black powder. When polished the metal may be silver white.
MOLECULAR WEIGHT: 180.9
MOLECULAR FORMULA: TA
BOILING POINT: 9797 F (5425 C) approximate
MELTING POINT: 5425 F (2996 C)
VAPOR PRESSURE: 0.0 mmHg @ 20 C
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (water=1): 16.69
WATER SOLUBILITY: insoluble
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: hydrofluoric acid, fused alkali, fuming sulfuric acid, nitric acid/hydrofluoric acid mixtures
Insoluble: acids, alkali

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Finely divided material may ignite spontaneously.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition.

INCOMPATIBILITIES: halogens, oxidizing materials, acids

TANTALUM:
BROMINE TRIFLUORIDE: Incandescent reaction.
FLUORINE: Ignites on contact.

LEAD CHROMATE: May react explosively.
MINERAL ACIDS: Incompatible.
OXIDIZERS (STRONG): Fire and explosion hazard.
SULFUR TRIOXIDE: Incompatable.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

-SECTION 11 TOXICOLOGICAL INFORMATION

-
TANTALUM:
TUMORIGENIC DATA:
3760 mg/kg implant-rat TDLo

HEALTH EFFECTS:
INHALATION:
ACUTE EXPOSURE:
TANTALUM: Insufflation of the metal powder in humans was without adverse effects.

CHRONIC EXPOSURE:
TANTALUM: Repeated or prolonged exposure to tantalum alloys may have caused a mild fibrosis and chronic rhinitis in exposed workers and may play a role in producing "hard metal pneumoconiosis" in workers exposed to tantalum as well as other metals.

SKIN CONTACT:
ACUTE EXPOSURE:
TANTALUM: May cause irritation.

CHRONIC EXPOSURE:
TANTALUM: No data available.

EYE CONTACT:
ACUTE EXPOSURE:
TANTALUM: Dusts may cause slight irritation.

CHRONIC EXPOSURE:
TANTALUM: Implantation of the metal into rabbit eyes for longer than a year has been reported to cause no significant adverse effects.

INGESTION:
ACUTE EXPOSURE:
TANTALUM: Large oral doses of tantalum compounds were well tolerated by rats indicating poor absorption.

CHRONIC EXPOSURE:
TANTALUM: Animal studies indicate absorption may occur.

-SECTION 12 ECOLOGICAL INFORMATION

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Not available

-SECTION 13 DISPOSAL CONSIDERATIONS

-

Dispose in accordance with all applicable regulations.

-SECTION 14 TRANSPORT INFORMATION

-

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

-SECTION 15 REGULATORY INFORMATION

-

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: Yes
CHRONIC: No
FIRE: Yes
REACTIVE: Yes
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
  EC CLASSIFICATION (CALCULATED):
    F Highly Flammable

  DANGER/HAZARD SYMBOL:
    F Highly Flammable

  EC RISK AND SAFETY PHRASES:
    R 17 Spontaneously flammable in air.

GERMAN REGULATIONS:
  WATER HAZARD CLASS (WGK):
    STATE OF CLASSIFICATION: VwVwS
    CLASSIFICATION UNDER HAZARD TO WATER: 0

NATIONAL INVENTORY STATUS:
  U.S. INVENTORY (TSCA): Listed on inventory.

  TSCA 12(b) EXPORT NOTIFICATION: Not listed.

-SECTION 16 OTHER INFORMATION

-

-SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

-

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
SUITE 3339
FORT BELVOIR, VA 22060-6223

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: TANTALUM CARBIDE POWDER

TRADE NAMES/SYNONYMS:
DLA22425

CHEMICAL FAMILY: carbides, inorganic

CREATION DATE: Jul 01 1992
REVISION DATE: Mar 22 2001

-SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

-

COMPONENT: TANTALUM CARBIDE POWDER
CAS NUMBER: 12070-06-3
EC NUMBER (EINECS): 235-118-3
PERCENTAGE: 100

-SECTION 3 HAZARDS IDENTIFICATION

-

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:
PHYSICAL DESCRIPTION: Odorless tan, gray, or black crystalline powder or solid.
MAJOR HEALTH HAZARDS: No significant target effects reported.
PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information on significant adverse effects
SKIN CONTACT:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects
EYE CONTACT:
SHORT TERM EXPOSURE: mild irritation
LONG TERM EXPOSURE: no information on significant adverse effects
INGESTION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects

CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

-SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash exposed skin with soap and water.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

-SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire and explosion hazard in bulk form.
Dust/air mixtures may ignite or explode.

EXTINGUISHING MEDIA: dolomite, dry powder for metal fires, dry sand, graphite, soda ash, sodium chloride

Do not get water directly on material.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.

-SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Clean up residue with a high-efficiency particulate filter vacuum.

-SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Keep separated from incompatible substances.

-SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

-

EXPOSURE LIMITS:
TANTALUM CARBIDE POWDER:
No occupational exposure limits established.

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Protective clothing is not required.

GLOVES: Protective gloves are not required, but recommended.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any dust, mist, and fume respirator.
Any air-purifying respirator with a high-efficiency particulate filter.
Any powered, air-purifying respirator with a dust, mist, and fume filter.
Any powered, air-purifying respirator with a high-efficiency particulate filter.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

-SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

-

PHYSICAL DESCRIPTION: Odorless tan, gray, or black crystalline powder or solid.
MOLECULAR FORMULA: TA-C
BOILING POINT: 9932 F (5500 C)
MELTING POINT: 7016 F (3880 C)
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (water=1): 13.9-14.4
WATER SOLUBILITY: insoluble
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Slightly Soluble: sulfuric acid, hydrofluoric acid

-SECTION 10 STABILITY AND REACTIVITY

-

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: None reported.

INCOMPATIBILITIES: oxidizing materials

TANTALUM CARBIDE:
OXIDIZERS (STRONG): Fire and explosion hazard.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

-SECTION 11 TOXICOLOGICAL INFORMATION

-

HEALTH EFFECTS:
INHALATION:
ACUTE EXPOSURE:
TANTALUM CARBIDE: Tantalum carbide may cause mucous membrane irritation. Tantalum dust has a low order of toxicity and is inert but has produced inflammatory lesions in the lungs of animals after severe exposure.

CHRONIC EXPOSURE:
TANTALUM CARBIDE: One detailed study indicates that tantalum carbide does not provoke a necrotizing or fibrosing response in animal lung parenchyma and thus acts as a physiologically inert substance.

SKIN CONTACT:
ACUTE EXPOSURE:
TANTALUM CARBIDE: No reports of irritation in human exposure. Some tantalum compounds have been suspected of causing skin irritation.

CHRONIC EXPOSURE:
TANTALUM CARBIDE: None known.

EYE CONTACT:
ACUTE EXPOSURE:
TANTALUM CARBIDE: May cause slight irritation but not known to be an irritant.

CHRONIC EXPOSURE:
TANTALUM CARBIDE: May cause conjunctivitis.

INGESTION:
ACUTE EXPOSURE:
TANTALUM CARBIDE: Systemic poisoning not known to occur.

CHRONIC EXPOSURE:

TANTALUM CARBIDE: None known in humans.

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: Yes
CHRONIC: No
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (CALCULATED): Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

-SECTION 16 OTHER INFORMATION

-

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
SUITE 3339
FORT BELVOIR, VA 22060-6223

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: TANTALUM PENTOXIDE

TRADE NAMES/SYNONYMS:
TANTALUM OXIDE; TANTALIC ACID ANHYDRIDE; TANTALUM PENTA OXIDE; TANTALUM (V) OXIDE; TANTALUM PENTOXIDE ELECTRONIC GRADE (SHIELDALLOY CORPORATION); O5TA2; DLA22450; RTECS WW5855000

CHEMICAL FAMILY: metal oxides

CREATION DATE: Jul 01 1992
REVISION DATE: Jun 19 2001

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TANTALUM PENTOXIDE
CAS NUMBER: 1314-61-0
EC NUMBER (EINECS): 215-238-2
PERCENTAGE: 100.0

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:
PHYSICAL DESCRIPTION: Odorless, white to yellow microcrystalline, infusible powder, lumps or pieces.
MAJOR HEALTH HAZARDS: No significant target effects reported.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects
SKIN CONTACT:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information is available
EYE CONTACT:
SHORT TERM EXPOSURE: mild irritation
LONG TERM EXPOSURE: no information is available
INGESTION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information is available

CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash exposed skin with soap and water.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: Use extinguishing agents appropriate for surrounding fire.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Large spills: Collect spilled material in appropriate container for disposal. Avoid generating dust. Clean up residue with a high-efficiency particulate filter vacuum.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in a tightly closed container. Store in a cool, dry place. Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
TANTALUM PENTOXIDE:

TANTALUM METAL AND OXIDE DUSTS (as Ta):
5 mg/m3 OSHA TWA
5 mg/m3 ACGIH TWA
5 mg/m3 NIOSH recommended TWA 10 hour(s)
10 mg/m3 NIOSH recommended STEL
4 mg/m3 DFG MAK (inhalable dust fraction)
1.5 mg/m3 DFG MAK (respirable dust fraction)
5 mg/m3 UK OES TWA (metal)
10 mg/m3 UK OES STEL (metal)

MEASUREMENT METHOD: Particulate filter; Gravimetric; NIOSH IV # 0500, Nuisance Dust (total)

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Protective clothing is not required.

GLOVES: Protective gloves are not required, but recommended.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
Measurement Element:
Tantalum (Ta)
25 mg/m3
Any dust and mist respirator.
50 mg/m3
Any dust and mist respirator except single-use and quarter-mask respirators.
Any dust, mist, and fume respirator.
Any supplied-air respirator.
125 mg/m3
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with a dust and mist filter.
250 mg/m3
Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.
Any supplied-air respirator with a tight-fitting facepiece that is operated in a continuous-flow mode.
Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.
2500 mg/m3
Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.
Escape -
Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.
Any appropriate escape-type, self-contained breathing apparatus.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a

separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Odorless, white to yellow microcrystalline, infusible powder, lumps or pieces.
MOLECULAR WEIGHT: 441.89
MOLECULAR FORMULA: TA2-O5
BOILING POINT: Not applicable
MELTING POINT: 3384-3420 F (1862-1882 C)
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (water=1): 8.2
WATER SOLUBILITY: insoluble
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: hydrofluoric acid
Insoluble: alcohol, mineral acids

-SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid generating dust.

INCOMPATIBILITIES: halogens, metals

TANTALUM PENTOXIDE:
BROMINE TRIFLUORIDE: React vigorously.
CHLORINE TRIFLUORIDE: Reacts violently, producing flame.
LITHIUM: Reaction occurs around 410 C with consequent temperature rise to 595 C.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

-SECTION 11 TOXICOLOGICAL INFORMATION

TANTALUM PENTOXIDE:
TOXICITY DATA:
8 gm/kg oral-rat LD50; >5 gm/kg intraperitoneal-rat LD; >4 gm/kg oral-mouse

LD50
ACUTE TOXICITY LEVEL:
Slightly Toxic: ingestion

HEALTH EFFECTS:
INHALATION:
ACUTE EXPOSURE:
TANTALUM PENTOXIDE: Tantalum dust has a low order of toxicity and is relatively inert. It has produced transient inflammatory lesions in the lungs of animals after severe exposure.

CHRONIC EXPOSURE:
TANTALUM PENTOXIDE: Repeated or prolonged exposure of tantalum dust may cause bronchitis.

SKIN CONTACT:
ACUTE EXPOSURE:
TANTALUM PENTOXIDE: Some tantalum compounds have been suspected of causing skin irritation.

CHRONIC EXPOSURE:
TANTALUM PENTOXIDE: No data available.

EYE CONTACT:
ACUTE EXPOSURE:
TANTALUM PENTOXIDE: May cause slight irritation but not known to be an irritant.

CHRONIC EXPOSURE:
TANTALUM PENTOXIDE: No data available.

INGESTION:
ACUTE EXPOSURE:
TANTALUM PENTOXIDE: The lethal dose reported in rats is 4500 mg/kg.

CHRONIC EXPOSURE:
TANTALUM PENTOXIDE: No data available.

-SECTION 12 ECOLOGICAL INFORMATION

-
Not available

-SECTION 13 DISPOSAL CONSIDERATIONS

-
Dispose in accordance with all applicable regulations.

-SECTION 14 TRANSPORT INFORMATION

-
U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: No
CHRONIC: No
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (CALCULATED): Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
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EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: TANTALUM METAL POWDER

TRADE NAMES/SYNONYMS:
TANTALUM-181; TANTALUM POWDER; TANTALUM; TA; DLA76954; RTECS WW5505000

CHEMICAL FAMILY: metal

CREATION DATE: Oct 01 1992
REVISION DATE: Dec 11 2001

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TANTALUM METAL POWDER
CAS NUMBER: 7440-25-7
EC NUMBER (EINECS): 231-135-5
PERCENTAGE: 100

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0

EMERGENCY OVERVIEW:
PHYSICAL DESCRIPTION: Odorless, gray to bluish, hard, malleable, ductile metal or black powder. When polished the metal may be silver white.
MAJOR HEALTH HAZARDS: No significant target effects reported.
PHYSICAL HAZARDS: Extremely flammable. May ignite spontaneously on exposure to air. Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: lung damage
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
EYE CONTACT:
SHORT TERM EXPOSURE: mild irritation
LONG TERM EXPOSURE: no information on significant adverse effects
INGESTION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects

CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash exposed skin with soap and water.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire and explosion hazard in bulk form. Dust/air mixtures may ignite or explode. Finely divided material may ignite spontaneously. May ignite on exposure to air.

EXTINGUISHING MEDIA: dolomite, dry powder for metal fires, dry sand, graphite, soda ash, sodium chloride

Do not get water directly on material.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.

LOWER FLAMMABLE LIMIT: <0.2 g/L

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Small spills: Collect spilled material in appropriate container for disposal. Move containers away from spill to a safe area. Large spills: Wet down area with water. Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Clean up residue with a high-efficiency particulate filter vacuum.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Keep material wetted. Store in compatible containers.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
TANTALUM METAL POWDER:
TANTALUM METAL AND OXIDE DUSTS (as Ta):
5 mg/m3 OSHA TWA
5 mg/m3 ACGIH TWA
5 mg/m3 NIOSH recommended TWA 10 hour(s)
10 mg/m3 NIOSH recommended STEL
4 mg/m3 DFG MAK (inhalable dust fraction)
1.5 mg/m3 DFG MAK (respirable dust fraction)
5 mg/m3 UK OES TWA (metal)
10 mg/m3 UK OES STEL (metal)

MEASUREMENT METHOD: Particulate filter; Gravimetric; NIOSH IV # 0500, Nuisance Dust (total)

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Protective clothing is not required.

GLOVES: Protective gloves are not required, but recommended.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
Measurement Element:
Tantalum (Ta)
25 mg/m3
Any dust and mist respirator.
50 mg/m3
Any dust and mist respirator except single-use and quarter-mask respirators.
Any dust, mist, and fume respirator.
Any supplied-air respirator.
125 mg/m3
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with a dust and mist filter.
250 mg/m3
Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.
Any supplied-air respirator with a tight-fitting facepiece that is operated

in a continuous-flow mode.
Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.

2500 mg/m3
Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.

Escape -
Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.
Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Odorless, gray to bluish, hard, malleable, ductile metal or black powder. When polished the metal may be silver white.
MOLECULAR WEIGHT: 180.9
MOLECULAR FORMULA: TA
BOILING POINT: 9797 F (5425 C) approximate
MELTING POINT: 5425 F (2996 C)
VAPOR PRESSURE: 0.0 mmHg @ 20 C
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (water=1): 16.69
WATER SOLUBILITY: insoluble
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: hydrofluoric acid, fused alkali, fuming sulfuric acid, nitric acid/hydrofluoric acid mixtures
Insoluble: acids, alkali

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Finely divided material may ignite spontaneously.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition.

INCOMPATIBILITIES: halogens, oxidizing materials, acids

TANTALUM:
BROMINE TRIFLUORIDE: Incandescent reaction.
FLUORINE: Ignites on contact.

LEAD CHROMATE: May react explosively.
MINERAL ACIDS: Incompatible.
OXIDIZERS (STRONG): Fire and explosion hazard.
SULFUR TRIOXIDE: Incompatable.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

TANTALUM METAL POWDER:
TUMORIGENIC DATA:
3760 mg/kg implant-rat TDLo

HEALTH EFFECTS:
INHALATION:
ACUTE EXPOSURE:
TANTALUM: Insufflation of the metal powder in humans was without adverse effects.

CHRONIC EXPOSURE:
TANTALUM: Repeated or prolonged exposure to tantalum alloys may have caused a mild fibrosis and chronic rhinitis in exposed workers and may play a role in producing "hard metal pneumoconiosis" in workers exposed to tantalum as well as other metals.

SKIN CONTACT:
ACUTE EXPOSURE:
TANTALUM: May cause irritation.

CHRONIC EXPOSURE:
TANTALUM: No data available.

EYE CONTACT:
ACUTE EXPOSURE:
TANTALUM: Dusts may cause slight irritation.

CHRONIC EXPOSURE:
TANTALUM: Implantation of the metal into rabbit eyes for longer than a year has been reported to cause no significant adverse effects.

INGESTION:
ACUTE EXPOSURE:
TANTALUM: Large oral doses of tantalum compounds were well tolerated by rats indicating poor absorption.

CHRONIC EXPOSURE:
TANTALUM: Animal studies indicate absorption may occur.

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Metal powders, flammable, n.o.s.
ID NUMBER: UN3089
HAZARD CLASS OR DIVISION: 4.1
PACKING GROUP: II

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID:
PROPER SHIPPING NAME: Metal powder, flammable, n.o.s.
UN NUMBER: UN3089
ADR/RID CLASS: 4.1
CLASSIFICATION CODE: F3
PACKING GROUP: II

AIR TRANSPORT IATA/ICAO:
PROPER SHIPPING NAME: Metal powder, flammable, n.o.s.
UN/ID NUMBER: UN3089
IATA/ICAO CLASS: 4.1
PACKING GROUP: II

MARITIME TRANSPORT IMDG:
PROPER SHIPPING NAME: Metal powder, flammable, n.o.s.
UN NUMBER: UN3089
IMDG CLASS: 4.1
PACKING GROUP: II

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):

Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: Yes
CHRONIC: No
FIRE: Yes
REACTIVE: Yes
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (CALCULATED):
F Highly Flammable

DANGER/HAZARD SYMBOL:
F Highly Flammable

EC RISK AND SAFETY PHRASES:
R 17 Spontaneously flammable in air.

GERMAN REGULATIONS:
WATER HAZARD CLASS (WGK):
STATE OF CLASSIFICATION: VwVwS
CLASSIFICATION UNDER HAZARD TO WATER: 0

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION

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SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
SUITE 3339
FORT BELVOIR, VA 22060-6223

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: COLUMBIUM CONCENTRATES

TRADE NAMES/SYNONYMS:
DLANA387

CREATION DATE: Jul 24 1992
REVISION DATE: Mar 18 2002

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: NIOBIUM OXIDE
CAS NUMBER: 1313-96-8
EC NUMBER (EINECS): 215-213-6
PERCENTAGE: <99.0

COMPONENT: TANTALUM PENTOXIDE
CAS NUMBER: 1314-61-0
EC NUMBER (EINECS): 215-238-2
PERCENTAGE: >60.0

COMPONENT: TITANIUM DIOXIDE
CAS NUMBER: 13463-67-7
EC NUMBER (EINECS): 236-675-5
PERCENTAGE: <5.0

COMPONENT: STANNIC OXIDE
CAS NUMBER: 18282-10-5
EC NUMBER (EINECS): 242-159-0
PERCENTAGE: <4.0

COMPONENT: PHOSPHORUS PENTOXIDE
CAS NUMBER: 1314-56-3
EC NUMBER (EINECS): 215-236-1
PERCENTAGE: <0.10

COMPONENT: ANTIMONY
CAS NUMBER: 7440-36-0
EC NUMBER (EINECS): 231-146-5
PERCENTAGE: <0.03

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:
PHYSICAL DESCRIPTION: Solid.
MAJOR HEALTH HAZARDS: No significant target effects reported.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation, metal fume fever
LONG TERM EXPOSURE: same as effects reported in short term exposure, irritation
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: irritation
EYE CONTACT:
SHORT TERM EXPOSURE: irritation, tearing
LONG TERM EXPOSURE: same as effects reported in short term exposure
INGESTION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects

CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

-SECTION 4 FIRST AID MEASURES

-
INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

-SECTION 5 FIRE FIGHTING MEASURES

-
FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: Use extinguishing agents appropriate for surrounding fire.

FIRE FIGHTING: Move container from fire area if it can be done without risk.

Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Collect spilled material in appropriate container for disposal. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
NIOBIUM OXIDE:
NUISANCE PARTICULATES (NUISANCE DUST):
5 mg/m3 OSHA TWA (respirable dust fraction)
15 mg/m3 OSHA TWA (total dust)
10 mg/m3 ACGIH TWA (inhalable particulate)
3 mg/m3 ACGIH TWA (respirable particulate)
4 mg/m3 DFG MAK (inhalable dust fraction)
1.5 mg/m3 DFG MAK (respirable dust fraction)

MEASUREMENT METHOD: Particulate filter; Gravimetric; NIOSH IV # 0500, Nuisance Dust (total), # 0600 (respirable)

TANTALUM PENTOXIDE:
TANTALUM METAL AND OXIDE DUSTS (as Ta):
5 mg/m3 OSHA TWA
5 mg/m3 ACGIH TWA
5 mg/m3 NIOSH recommended TWA 10 hour(s)
10 mg/m3 NIOSH recommended STEL
4 mg/m3 DFG MAK (inhalable dust fraction)
1.5 mg/m3 DFG MAK (respirable dust fraction)
5 mg/m3 UK OES TWA (metal)
10 mg/m3 UK OES STEL (metal)

MEASUREMENT METHOD: Particulate filter; Gravimetric; NIOSH IV # 0500, Nuisance Dust (total)

TITANIUM DIOXIDE:
15 mg/m3 OSHA TWA (total dust)
10 mg/m3 OSHA TWA (total particulate) (vacated by 58 FR 35338, June 30, 1993)

10 mg/m3 ACGIH TWA
1.5 mg/m3 DFG MAK (respirable dust fraction)
10 mg/m3 UK OES TWA (total inhalable dust)
4 mg/m3 UK OES TWA (respirable dust)

MEASUREMENT METHOD: Particulate filter; Acid; Flame atomic absorption spectrometry; NIOSH II(3) # S385

STANNIC OXIDE:
TIN AND INORGANIC TIN COMPOUNDS (as Sn):
2 mg/m3 OSHA TWA
2 mg/m3 ACGIH TWA
2 mg/m3 NIOSH recommended TWA 10 hour(s)
2 mg/m3 EC MAK
2 mg/m3 UK OES TWA
4 mg/m3 UK OES STEL

MEASUREMENT METHOD: Particulate filter; Acid; Inductively coupled plasma; NIOSH IV # 7300, Elements

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any dust, mist, and fume respirator.
Any air-purifying respirator with a high-efficiency particulate filter.
Any powered, air-purifying respirator with a dust, mist, and fume filter.
Any powered, air-purifying respirator with a high-efficiency particulate filter.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

-SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Solid.
BOILING POINT: Not applicable
MELTING POINT: Not available
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY: Not available

WATER SOLUBILITY: Not available
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: None reported.

INCOMPATIBILITIES: halogens, metals, reducing agents

NIOBIUM OXIDE:
CHLORINE TRIFLUORIDE: Incompatible.
LITHIUM: Reacts violently and exothermically at 320 C to 490 C.

TITANIUM DIOXIDE:
ALUMINUM: Reaction is accompanied by incandescence.
CALCIUM: Reaction is accompanied by incandescence.
LITHIUM: Reaction occurs around 200 C, with incandescence.
MAGNESIUM: Reaction is accompanied by incandescence.
POTASSIUM: Reaction is accompanied by incandescence.
SODIUM: Reaction is accompanied by incandescence.
ZINC: Reaction is accompanied by incandescence.

STANNIC OXIDE:
CHLORINE TRIFLUORIDE: Violent reaction, ignition often occurring.
HYDROGEN TRISULFIDE: Possible ignition.
MAGNESIUM: Explodes when heated.
POTASSIUM: Reduced with incandescence.
SODIUM: Reduced with incandescence.
ALUMINUM: Reduced violently or explosively.

TANTALUM PENTOXIDE:
BROMINE TRIFLUORIDE: React vigorously.
CHLORINE TRIFLUORIDE: Reacts violently, producing flame.
LITHIUM: Reaction occurs around 410 C with consequent temperature rise to 595 C.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

-SECTION 11 TOXICOLOGICAL INFORMATION

NIOBIUM OXIDE:

TOXICITY DATA:
>10 gm/kg oral-rat LD; >10 gm/kg intraperitoneal-rat LD; >4 gm/kg oral-mouse
LD50; >10 gm/kg intraperitoneal-mouse LD; 60 gm/kg/6 week(s) intermittent oral-rat TDLo
ACUTE TOXICITY LEVEL: Insufficient Data.
ADDITIONAL DATA: In vitro studies indicate that the inhibition of adenosine triphosphatase may be involved with the biological activity of niobium.

TANTALUM PENTOXIDE:
TOXICITY DATA:
8 gm/kg oral-rat LD50; >5 gm/kg intraperitoneal-rat LD; >4 gm/kg oral-mouse LD50
ACUTE TOXICITY LEVEL:
Slightly Toxic: ingestion

TITANIUM DIOXIDE:
IRRITATION DATA:
300 ug/3 day(s)-intermittent skin-human mild
TOXICITY DATA:
6820 mg/m3/4 hour(s) inhalation-rat LC50; >24000 mg/kg oral-rat LD50; >100 ug/kg intratracheal-rat LD; 250 mg/m3/6 hour(s)-4 week(s) intermittent inhalation-rat TCLo; 50 mg/m3/6 hour(s)-13 week(s) intermittent inhalation-rat TCLo; 10 mg/m3/6 hour(s)-13 week(s) intermittent inhalation-mouse TCLo; 250 mg/m3/6 hour(s)-13 week(s) intermittent inhalation-hamster TCLo
CARCINOGEN STATUS: IARC: Human Inadequate Evidence, Animal Limited Evidence, Group 3; ACGIH: A4 -Not Classifiable as a Human Carcinogen
Increased incidences of lung adenomas in rats of both sexes and of cystic keratinizing lesions diagnosed as squamous-cell carcinomas in female rats were observed in animals that had inhaled high but not low doses of titanium dioxide. Intratracheal administration of titantium dioxide in combination with benzo(a)pyrene to hamsters resulted in an increase in the incidence of benign and malignant tumors of the larynx, trachea and lungs over that in benzo(a)pyrene-treated controls.
ACUTE TOXICITY LEVEL:
Moderately Toxic: inhalation
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders
TUMORIGENIC DATA:
250 mg/m3 inhalation-rat TCLo/6 hour(s)-2 year(s) intermittent; 360 mg/kg intramuscular-rat TDLo/2 year(s) intermittent; 260 mg/kg intramuscular-rat TD/84 week(s) intermittent; 10 mg/m3 inhalation-rat TC/18 hour(s)-2 year(s) intermittent
MUTAGENIC DATA:
micronucleus test - mouse intraperitoneal 3 gm/kg 3 day(s)-continuous; micronucleus test - hamster ovary 5 umol/L; DNA inhibition - hamster lung 500 mg/L; sister chromatid exchange - hamster ovary 1 umol/L

STANNIC OXIDE:
TOXICITY DATA:
>20 gm/kg oral-rat LD50; >6600 mg/kg intraperitoneal-rat LD50; >20 gm/kg oral-mouse LD50; >6600 mg/kg intraperitoneal-mouse LD50
ACUTE TOXICITY LEVEL: Insufficient Data.

HEALTH EFFECTS:
INHALATION:

STANNIC OXIDE: May cause chest pain, dyspnea, rales, and leukocytosis. Repeated exposure may cause stannosis, a benign pneumoconiosis, without symptoms of interference of pulmonary function. See information on inorganic tin compounds and metal fume fever.

ACUTE EXPOSURE:

NIOBIUM OXIDE: Dust may cause respiratory irritation.

TANTALUM PENTOXIDE: Tantalum dust has a low order of toxicity and is relatively inert. It has produced transient inflammatory lesions in the lungs of animals after severe exposure.

TITANIUM DIOXIDE: Inhalation may cause irritation and coughing. Nuisance dusts may cause unpleasant deposits in the nasal passages.

INORGANIC TIN COMPOUNDS: Exposure to some inorganic tin compounds may result in irritation of the mucous membranes, nose, and throat.

METAL FUME FEVER: Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur. Tolerance to fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours.

CHRONIC EXPOSURE:

NIOBIUM OXIDE: None known in humans.

TANTALUM PENTOXIDE: Repeated or prolonged exposure of tantalum dust may cause bronchitis.

TITANIUM DIOXIDE: A few cases of slight fibrosis without disabling injury have been reported from occupational exposure. Rats repeatedly exposed to concentrations of 10-328 million particles/ft3 for as long as 13 months showed small focal areas of emphysema which were attributed to large deposits of dust. Rats exposed to concentrations of 10, 50, and 250 mg/m3 for 6 hours/day, 5 days/week for 2 years showed no abnormal clinical signs, body weight changes, or excess mortality in any exposed group. There were however dose-dependent increases in the incidence of pneumonia, tracheitis and rhinitis with squamous metaplasia in the anterior nasal cavity. At 10 mg/m3, the pulmonary response satisfied the criteria for a nuisance dust. Bronchioalveolar adenomas and cystic keratinizing squamous cell carcinomas occurred only at the 250 mg/m3 level, twenty-five times the threshold limit value. These lung tumors were different from common human lung cancers in terms of tumor type, location, and tumorigenesis, and were devoid of tumor metastasis.

INORGANIC TIN COMPOUNDS: No data available.

METAL FUME FEVER: There is no form of chronic metal fume fever, however, repeated bouts with symptoms as described above are quite common. Resistance to the condition develops after a few days of exposure, but is quickly lost in 1 or 2 days.

SKIN CONTACT:
ACUTE EXPOSURE:
NIOBIUM OXIDE: No irritating effects have been reported in humans. Some niobium compounds may irritate the skin.

TANTALUM PENTOXIDE: Some tantalum compounds have been suspected of causing skin irritation.

TITANIUM DIOXIDE: Topically it is reported to be devoid of toxicity and chemically non-irritating. However, titanium dioxide may occasionally be so occlusive that it produces miliaria.

STANNIC OXIDE: It is not absorbed and is relatively innocuous to the skin.

CHRONIC EXPOSURE:
NIOBIUM OXIDE: No data available.

TANTALUM PENTOXIDE: No data available.

TITANIUM DIOXIDE: Application of 300 ug for 3 days intermittently to human skin produced mild irritation.

STANNIC OXIDE: No data available.

EYE CONTACT:
ACUTE EXPOSURE:
NIOBIUM OXIDE: May cause irritation.

TANTALUM PENTOXIDE: May cause slight irritation but not known to be an irritant.

TITANIUM DIOXIDE: Introduction by tatooing into the cornea of rabbit eyes and patients with corneal scars resulted in permanent white coloration, but no irritation.

STANNIC OXIDE: Particulates in the eye may cause lacrimation.

CHRONIC EXPOSURE:
NIOBIUM OXIDE: No effects reported, may cause conjunctivitis.

TANTALUM PENTOXIDE: No data available.

TITANIUM DIOXIDE: No data available.

STANNIC OXIDE: No data available.

INGESTION:
ACUTE EXPOSURE:
NIOBIUM OXIDE: No specific data available. Metallic niobium has a low order of toxicity because it is poorly absorbed in the stomach and

intestines.

TANTALUM PENTOXIDE: The lethal dose reported in rats is 4500 mg/kg.

TITANIUM DIOXIDE: Titanium dioxide has been reported to be physiologically inert. Ingestion of large quantities may cause intestinal obstruction. However, a pound has been ingested without apparent harm or distress.

STANNIC OXIDE: Most tin salts are relatively non-toxic and poorly absorbed through the gastrointestinal tract.

CHRONIC EXPOSURE:

NIOBIUM OXIDE: Niobium in the drinking water at 5 ppm plus 1.62 mg/kg in the diet caused liver degeneration.

TANTALUM PENTOXIDE: No data available.

TITANIUM DIOXIDE: Mice and rats fed 50,000 and 25,000 ppm for 103 weeks showed no evidence of toxicity and no increased incidence of tumors.

STANNIC OXIDE: Rat feeding studies for 4-13 weeks at levels of 0.03, 0.10, 0.30 and 1.0 percent or for any level up to 7900 ppm, resulted in no adverse effects.

-SECTION 12 ECOLOGICAL INFORMATION

Not available

-SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

-SECTION 14 TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

-SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
ANTIMONY: 5000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: No
CHRONIC: Yes
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (CALCULATED): Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
SUITE 3339
FORT BELVOIR, VA 22060-6223

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: TANTALUM MINERALS

TRADE NAMES/SYNONYMS:
DLANA391

CREATION DATE: Jul 24 1992
REVISION DATE: Mar 18 2002

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TITANIUM DIOXIDE
CAS NUMBER: 13463-67-7
EC NUMBER (EINECS): 236-675-5
PERCENTAGE: <20.0

COMPONENT: STANNIC OXIDE
CAS NUMBER: 18282-10-5
EC NUMBER (EINECS): 242-159-0
PERCENTAGE: <20.0

COMPONENT: TANTALUM PENTOXIDE
CAS NUMBER: 1314-61-0
EC NUMBER (EINECS): 215-238-2
PERCENTAGE: >1.0

COMPONENT: NIOBIUM OXIDE
CAS NUMBER: 1313-96-8
EC NUMBER (EINECS): 215-213-6
PERCENTAGE: >1.0

COMPONENT: URANIUM OCTAOXIDE
CAS NUMBER: 1344-59-8
EC NUMBER (EINECS): 215-702-4
PERCENTAGE: <0.8

COMPONENT: THORIUM DIOXIDE
CAS NUMBER: 1314-20-1
EC NUMBER (EINECS): 215-225-1
PERCENTAGE: <0.5

COMPONENT: ANTIMONY
CAS NUMBER: 7440-36-0
EC NUMBER (EINECS): 231-146-5

PERCENTAGE: <0.01

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:
PHYSICAL DESCRIPTION: Small sized granular material.
MAJOR HEALTH HAZARDS: cancer hazard (in humans)

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation, metal fume fever
LONG TERM EXPOSURE: same as effects reported in short term exposure, irritation
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: irritation
EYE CONTACT:
SHORT TERM EXPOSURE: irritation, tearing
LONG TERM EXPOSURE: same as effects reported in short term exposure
INGESTION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects

CARCINOGEN STATUS:
OSHA: No
NTP: Yes
IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: Use extinguishing agents appropriate for surrounding fire.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

-SECTION 6 ACCIDENTAL RELEASE MEASURES

WATER RELEASE:
Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:
Large spills: Collect spilled material in appropriate container for disposal. Avoid generating dust. Clean up residue with a high-efficiency particulate filter vacuum. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

-SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

-SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
TITANIUM DIOXIDE:
- 15 mg/m3 OSHA TWA (total dust)
- 10 mg/m3 OSHA TWA (total particulate) (vacated by 58 FR 35338, June 30, 1993)
- 10 mg/m3 ACGIH TWA
- 1.5 mg/m3 DFG MAK (respirable dust fraction)
- 10 mg/m3 UK OES TWA (total inhalable dust)
- 4 mg/m3 UK OES TWA (respirable dust)

MEASUREMENT METHOD: Particulate filter; Acid; Flame atomic absorption spectrometry; NIOSH II(3) # S385

STANNIC OXIDE:
TIN AND INORGANIC TIN COMPOUNDS (as Sn):
- 2 mg/m3 OSHA TWA
- 2 mg/m3 ACGIH TWA
- 2 mg/m3 NIOSH recommended TWA 10 hour(s)
- 2 mg/m3 EC MAK
- 2 mg/m3 UK OES TWA
- 4 mg/m3 UK OES STEL

MEASUREMENT METHOD: Particulate filter; Acid; Inductively coupled plasma; NIOSH IV # 7300, Elements

TANTALUM PENTOXIDE:
TANTALUM METAL AND OXIDE DUSTS (as Ta):
5 mg/m3 OSHA TWA
5 mg/m3 ACGIH TWA
5 mg/m3 NIOSH recommended TWA 10 hour(s)
10 mg/m3 NIOSH recommended STEL
4 mg/m3 DFG MAK (inhalable dust fraction)
1.5 mg/m3 DFG MAK (respirable dust fraction)
5 mg/m3 UK OES TWA (metal)
10 mg/m3 UK OES STEL (metal)

MEASUREMENT METHOD: Particulate filter; Gravimetric; NIOSH IV # 0500, Nuisance Dust (total)

NIOBIUM OXIDE:
NUISANCE PARTICULATES (NUISANCE DUST):
5 mg/m3 OSHA TWA (respirable dust fraction)
15 mg/m3 OSHA TWA (total dust)
10 mg/m3 ACGIH TWA (inhalable particulate)
3 mg/m3 ACGIH TWA (respirable particulate)
4 mg/m3 DFG MAK (inhalable dust fraction)
1.5 mg/m3 DFG MAK (respirable dust fraction)

MEASUREMENT METHOD: Particulate filter; Gravimetric; NIOSH IV # 0500, Nuisance Dust (total), # 0600 (respirable)

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any dust, mist, and fume respirator.
Any air-purifying respirator with a high-efficiency particulate filter.
Any powered, air-purifying respirator with a dust, mist, and fume filter.
Any powered, air-purifying respirator with a high-efficiency particulate filter.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Small sized granular material.
BOILING POINT: Not applicable
MELTING POINT: Not available
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY: Not available
WATER SOLUBILITY: Not available
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid generating dust.

INCOMPATIBILITIES: metals, halogens, reducing agents

TITANIUM DIOXIDE:
ALUMINUM: Reaction is accompanied by incandescence.
CALCIUM: Reaction is accompanied by incandescence.
LITHIUM: Reaction occurs around 200 C, with incandescence.
MAGNESIUM: Reaction is accompanied by incandescence.
POTASSIUM: Reaction is accompanied by incandescence.
SODIUM: Reaction is accompanied by incandescence.
ZINC: Reaction is accompanied by incandescence.

TANTALUM PENTOXIDE:
BROMINE TRIFLUORIDE: React vigorously.
CHLORINE TRIFLUORIDE: Reacts violently, producing flame.
LITHIUM: Reaction occurs around 410 C with consequent temperature rise to 595 C.

NIOBIUM OXIDE:
CHLORINE TRIFLUORIDE: Incompatible.
LITHIUM: Reacts violently and exothermically at 320 C to 490 C.

STANNIC OXIDE:
CHLORINE TRIFLUORIDE: Violent reaction, ignition often occurring.
HYDROGEN TRISULFIDE: Possible ignition.
MAGNESIUM: Explodes when heated.
POTASSIUM: Reduced with incandescence.
SODIUM: Reduced with incandescence.
ALUMINUM: Reduced violently or explosively.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

TITANIUM DIOXIDE:
IRRITATION DATA:
300 ug/3 day(s)-intermittent skin-human mild
TOXICITY DATA:
6820 mg/m3/4 hour(s) inhalation-rat LC50; >24000 mg/kg oral-rat LD50; >100 ug/kg intratracheal-rat LD; 250 mg/m3/6 hour(s)-4 week(s) intermittent inhalation-rat TCLo; 50 mg/m3/6 hour(s)-13 week(s) intermittent inhalation-rat TCLo; 10 mg/m3/6 hour(s)-13 week(s) intermittent inhalation-mouse TCLo; 250 mg/m3/6 hour(s)-13 week(s) intermittent inhalation-hamster TCLo
CARCINOGEN STATUS: IARC: Human Inadequate Evidence, Animal Limited Evidence, Group 3; ACGIH: A4 -Not Classifiable as a Human Carcinogen
Increased incidences of lung adenomas in rats of both sexes and of cystic keratinizing lesions diagnosed as squamous-cell carcinomas in female rats were observed in animals that had inhaled high but not low doses of titanium dioxide. Intratracheal administration of titantium dioxide in combination with benzo(a)pyrene to hamsters resulted in an increase in the incidence of benign and malignant tumors of the larynx, trachea and lungs over that in benzo(a)pyrene-treated controls.
ACUTE TOXICITY LEVEL:
Moderately Toxic: inhalation
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders
TUMORIGENIC DATA:
250 mg/m3 inhalation-rat TCLo/6 hour(s)-2 year(s) intermittent; 360 mg/kg intramuscular-rat TDLo/2 year(s) intermittent; 260 mg/kg intramuscular-rat TD/84 week(s) intermittent; 10 mg/m3 inhalation-rat TC/18 hour(s)-2 year(s) intermittent
MUTAGENIC DATA:
micronucleus test - mouse intraperitoneal 3 gm/kg 3 day(s)-continuous; micronucleus test - hamster ovary 5 umol/L; DNA inhibition - hamster lung 500 mg/L; sister chromatid exchange - hamster ovary 1 umol/L

STANNIC OXIDE:
TOXICITY DATA:
>20 gm/kg oral-rat LD50; >6600 mg/kg intraperitoneal-rat LD50; >20 gm/kg oral-mouse LD50; >6600 mg/kg intraperitoneal-mouse LD50
ACUTE TOXICITY LEVEL: Insufficient Data.

TANTALUM PENTOXIDE:
TOXICITY DATA:
8 gm/kg oral-rat LD50; >5 gm/kg intraperitoneal-rat LD; >4 gm/kg oral-mouse LD50
ACUTE TOXICITY LEVEL:
Slightly Toxic: ingestion

NIOBIUM OXIDE:

TOXICITY DATA:
>10 gm/kg oral-rat LD; >10 gm/kg intraperitoneal-rat LD; >4 gm/kg oral-mouse
LD50; >10 gm/kg intraperitoneal-mouse LD; 60 gm/kg/6 week(s) intermittent oral-rat TDLo
ACUTE TOXICITY LEVEL: Insufficient Data.
ADDITIONAL DATA: In vitro studies indicate that the inhibition of adenosine triphosphatase may be involved with the biological activity of niobium.

THORIUM DIOXIDE:
TOXICITY DATA:
>1140 mg/kg intratracheal-rat LD50
CARCINOGEN STATUS: NTP: Known Human Carcinogen; EC: Category 1
Intravascular injection in humans produced tumors of the liver, including hepatocellular carcinomas, cholangiocellular carcinomas, carcinomas of the extra-hepatic biliary system, sarcomas, hemangioendotheliomas, reticulum cell sarcomas, carcinomas of the common hepatic duct, adenocarcinomas, liver cell carcinomas, undifferentiated carcinomas, hepatomas, tumors of the kidney, including carcinomas of the renal parenchyma, and sarcomas and carcinomas of the renal pelvis. In addition, carcinomas of the maxillary sinuses, spindle cell sarcomas in the later cervical region, leukemias, and other hematologic disorders have been related to intravascular injection of thorium dioxide. Studies suggest a latency of 21-36 years. A variety of carcinomas have been induced in animals following intravenous, subcutaneous, and submucousal administration.
ACUTE TOXICITY LEVEL: Insufficient Data.
TUMORIGENIC DATA:
1 gm/kg parenteral-woman TDLo; 2880 mg/kg unreported-human TDLo; 490 mg/kg intraarterial-human TDLo; 160 mg/kg intravenous-rat TDLo; 20 gm/kg subcutaneous-mouse TDLo; 10 gm/kg intravenous-mouse TDLo; 400 mg/kg intramuscular-mouse TDLo; 1500 mg/kg intravenous-rabbit TDLo; 4 gm/kg parenteral-guinea pig TDLo/15 week(s) intermittent; 2 gm/kg unreported-hamster TDLo; 3600 mg/kg intravenous-rabbit TD; 300 mg/kg intravenous-rabbit TD/2 year(s) intermittent; 700 mg/kg parenteral-human TD; 1260 mg/kg parenteral-human TD; 2 gm/kg intraarterial-woman TD; 10 mg/kg intravenous-mouse TD; 2350 mg/kg parenteral-woman TD; 1190 mg/kg intraarterial-man TD; 1302 mg/kg intraarterial-human TD
ADDITIONAL DATA: Radioactive.

HEALTH EFFECTS:
INHALATION:
STANNIC OXIDE: May cause chest pain, dyspnea, rales, and leukocytosis. Repeated exposure may cause stannosis, a benign pneumoconiosis, without symptoms of interference of pulmonary function. See information on inorganic tin compounds and metal fume fever.

ACUTE EXPOSURE:
TITANIUM DIOXIDE: Inhalation may cause irritation and coughing. Nuisance dusts may cause unpleasant deposits in the nasal passages.

INORGANIC TIN COMPOUNDS: Exposure to some inorganic tin compounds may result in irritation of the mucous membranes, nose, and throat.

METAL FUME FEVER: Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns. Symptoms may be delayed

4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur. Tolerance to fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours.

TANTALUM PENTOXIDE: Tantalum dust has a low order of toxicity and is relatively inert. It has produced transient inflammatory lesions in the lungs of animals after severe exposure.

NIOBIUM OXIDE: Dust may cause respiratory irritation.

CHRONIC EXPOSURE:

TITANIUM DIOXIDE: A few cases of slight fibrosis without disabling injury have been reported from occupational exposure. Rats repeatedly exposed to concentrations of 10-328 million particles/ft3 for as long as 13 months showed small focal areas of emphysema which were attributed to large deposits of dust. Rats exposed to concentrations of 10, 50, and 250 mg/m3 for 6 hours/day, 5 days/week for 2 years showed no abnormal clinical signs, body weight changes, or excess mortality in any exposed group. There were however dose-dependent increases in the incidence of pneumonia, tracheitis and rhinitis with squamous metaplasia in the anterior nasal cavity. At 10 mg/m3, the pulmonary response satisfied the criteria for a nuisance dust. Bronchioalveolar adenomas and cystic keratinizing squamous cell carcinomas occurred only at the 250 mg/m3 level, twenty-five times the threshold limit value. These lung tumors were different from common human lung cancers in terms of tumor type, location, and tumorigenesis, and were devoid of tumor metastasis.

INORGANIC TIN COMPOUNDS: No data available.

METAL FUME FEVER: There is no form of chronic metal fume fever, however, repeated bouts with symptoms as described above are quite common. Resistance to the condition develops after a few days of exposure, but is quickly lost in 1 or 2 days.

TANTALUM PENTOXIDE: Repeated or prolonged exposure of tantalum dust may cause bronchitis.

NIOBIUM OXIDE: None known in humans.

SKIN CONTACT:

ACUTE EXPOSURE:

TITANIUM DIOXIDE: Topically it is reported to be devoid of toxicity and chemically non-irritating. However, titanium dioxide may occasionally be so occlusive that it produces miliaria.

STANNIC OXIDE: It is not absorbed and is relatively innocuous to the skin.

TANTALUM PENTOXIDE: Some tantalum compounds have been suspected of causing skin irritation.

NIOBIUM OXIDE: No irritating effects have been reported in humans. Some niobium compounds may irritate the skin.

CHRONIC EXPOSURE:
TITANIUM DIOXIDE: Application of 300 ug for 3 days intermittently to human skin produced mild irritation.

STANNIC OXIDE: No data available.

TANTALUM PENTOXIDE: No data available.

NIOBIUM OXIDE: No data available.

EYE CONTACT:
ACUTE EXPOSURE:
TITANIUM DIOXIDE: Introduction by tatooing into the cornea of rabbit eyes and patients with corneal scars resulted in permanent white coloration, but no irritation.

STANNIC OXIDE: Particulates in the eye may cause lacrimation.

TANTALUM PENTOXIDE: May cause slight irritation but not known to be an irritant.

NIOBIUM OXIDE: May cause irritation.

CHRONIC EXPOSURE:
TITANIUM DIOXIDE: No data available.

STANNIC OXIDE: No data available.

TANTALUM PENTOXIDE: No data available.

NIOBIUM OXIDE: No effects reported, may cause conjunctivitis.

INGESTION:
ACUTE EXPOSURE:
TITANIUM DIOXIDE: Titanium dioxide has been reported to be physiologically inert. Ingestion of large quantities may cause intestinal obstruction. However, a pound has been ingested without apparent harm or distress.

STANNIC OXIDE: Most tin salts are relatively non-toxic and poorly absorbed through the gastrointestinal tract.

TANTALUM PENTOXIDE: The lethal dose reported in rats is 4500 mg/kg.

NIOBIUM OXIDE: No specific data available. Metallic niobium has a low order of toxicity because it is poorly absorbed in the stomach and intestines.

CHRONIC EXPOSURE:
TITANIUM DIOXIDE: Mice and rats fed 50,000 and 25,000 ppm for 103 weeks showed no evidence of toxicity and no increased incidence of tumors.

STANNIC OXIDE: Rat feeding studies for 4-13 weeks at levels of 0.03, 0.10, 0.30 and 1.0 percent or for any level up to 7900 ppm, resulted in no adverse effects.

TANTALUM PENTOXIDE: No data available.

NIOBIUM OXIDE: Niobium in the drinking water at 5 ppm plus 1.62 mg/kg in the diet caused liver degeneration.

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
ANTIMONY: 5000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: No
CHRONIC: Yes
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
THORIUM DIOXIDE

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65:
Known to the state of California to cause the following:
THORIUM DIOXIDE
Cancer (Feb 27, 1987)

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (CALCULATED): Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION

MATERIAL SAFETY DATA SHEET

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
SUITE 3339
FORT BELVOIR, VA 22060-6223

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: COLUMBIUM

TRADE NAMES/SYNONYMS:
NIOBIUM; NIOBIUM ELEMENT; NIOBIUM METAL; Nb; DLA16510; RTECS QT9900000

CHEMICAL FAMILY: metal

CREATION DATE: Jul 01 1992
REVISION DATE: Sep 16 2002

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: COLUMBIUM
CAS NUMBER: 7440-03-1
EC NUMBER (EINECS): 231-113-5
PERCENTAGE: 100.0

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0

EMERGENCY OVERVIEW:
PHYSICAL DESCRIPTION: Lustrous, steel gray metal powder or solid.
MAJOR HEALTH HAZARDS: No significant target effects reported.
PHYSICAL HAZARDS: Flammable solid. Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
EYE CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: irritation
INGESTION:
SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information on significant adverse effects
CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire and explosion hazard in bulk form. Dust/air
mixtures may ignite or explode.

EXTINGUISHING MEDIA: dolomite, dry powder for metal fires, dry sand, graphite, soda ash, sodium chloride

Do not get water directly on material.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Large spills: Collect spilled material in appropriate container for disposal. Avoid generating dust. Clean up residue with a high-efficiency particulate filter vacuum.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
COLUMBIUM:
No occupational exposure limits established.

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.
GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any dust, mist, and fume respirator.
Any air-purifying respirator with a high-efficiency particulate filter.
Any powered, air-purifying respirator with a dust, mist, and fume filter.
Any powered, air-purifying respirator with a high-efficiency particulate filter.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Lustrous, steel gray metal powder or solid.
MOLECULAR WEIGHT: 92.91
MOLECULAR FORMULA: Nb
BOILING POINT: 9261 F (5127 C)
MELTING POINT: 4456-4492 F (2458-2478 C)
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (water=1): 8.57
WATER SOLUBILITY: insoluble
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: fused alkali, nitric acid/hydrofluoric acid mixtures, hot sulfuric acid, hot hydrochloric acid, hot phosphoric acid
Insoluble: cold hydrochloric acid, cold nitric acid, aqua regia

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.
CONDITIONS TO AVOID: Avoid generating dust. Avoid heat, flames, sparks and other sources of ignition.

INCOMPATIBILITIES: halogens, oxidizing materials
NIOBIUM:
BROMINE TRIFLUORIDE: Incandescent reaction.
CHLORINE: Ignites at 205 C.
FLUORINE: Incandescent reaction.
MINERAL ACIDS: Incompatible.
OXIDIZERS (STRONG): Fire and explosion hazard.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

COLUMBIUM:
TOXICITY DATA:
>10 gm/kg oral-rat LD; >10 gm/kg intraperitoneal-rat LD; >10 gm/kg oral-mouse LD; >10 gm/kg
intraperitoneal-mouse LD

HEALTH EFFECTS:
INHALATION:
ACUTE EXPOSURE:
NIOBIUM: Inhalation may cause irritation of the mucous membranes. Inhaled particles may be retained in the lungs.

CHRONIC EXPOSURE:
NIOBIUM: No data available.

SKIN CONTACT:
ACUTE EXPOSURE:
NIOBIUM: May cause irritation.

CHRONIC EXPOSURE:
NIOBIUM: No data available.

EYE CONTACT:
ACUTE EXPOSURE:
NIOBIUM: May cause transient, mechanical irritation.

CHRONIC EXPOSURE:
NIOBIUM: May cause conjunctivitis.

INGESTION:
ACUTE EXPOSURE:

NIOBIUM: Metallic niobium has a low order of toxicity due to poor absorption from stomach and intestines.

CHRONIC EXPOSURE:
NIOBIUM: Niobium crosses the placental barrier in animals.

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Metal powders, flammable, n.o.s. (niobium)
ID NUMBER: UN3089
HAZARD CLASS OR DIVISION: 4.1
PACKING GROUP: II

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID:
PROPER SHIPPING NAME: Metal powder, flammable, n.o.s.
UN NUMBER: UN3089
ADR/RID CLASS: 4.1
CLASSIFICATION CODE: F3
PACKING GROUP: II

AIR TRANSPORT IATA/ICAO:
PROPER SHIPPING NAME: Metal powder, flammable, n.o.s.
UN/ID NUMBER: UN3089
IATA/ICAO CLASS: 4.1
PACKING GROUP: II

MARITIME TRANSPORT IMDG:
PROPER SHIPPING NAME: Metal powder, flammable, n.o.s.

UN NUMBER: UN3089
IMDG CLASS: 4.1
PACKING GROUP: II

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: Yes

CHRONIC: No
FIRE: Yes
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (CALCULATED): Not determined.

GERMAN REGULATIONS:
WATER HAZARD CLASS (WGK):
STATE OF CLASSIFICATION: VwVwS
CLASSIFICATION UNDER HAZARD TO WATER: 0

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed
.
SECTION 16 OTHER INFORMATION

J.5 Fedwire Procedures (JAN 95)

The Sender should use a bank that quotes wire transfer capability. The Federal Reserve Bank of New York will then process the money for deposit to the Defense National Stockpile Account with the Department of the Treasury.

PROCEDURES FOR DEPOSIT SLIP(S) FOR FEDWIRE:

To ensure the funds are credited to the Defense National Stockpile Center the following information is **required** on any wire transfer of funds.

1. Treasury Dept. Code – Routing No. to the Treasury
   MUST BE ON SLIP "021030004";

2. Amount of funds to be transferred;

3. Treasury Department Name – **This item is critical** –

   MUST APPEAR EXACTLY AS SHOWN BELOW

   TREAS NYC/(CTR/BNF=/AC-00006355)

4. Third Party Information – Purchaser's Name, commodity, and contract number.