

APPENDIX 4-A

STORAGE OF TANTALUM METAL, VACUUM GRADE**1. DESCRIPTION**

Tantalum Metal , High Purity, Vacuum Melting Grade (VMG) is received for storage in the following forms:

- a. Sheared Pieces (Type 1) which shall be in the form of squares, a maximum of 4 inch x 4 inch and 1/8 inch thickness and a minimum of 2 inch x 2 inch and 1/8 inch thickness. Each lot shall have a net weight of 500 to 800 pounds and shall consist of material produced from only one ingot. Each production lot of Type 1 material shall be traceable to the ingot or production heat from which it was made.
- b. Ingots (Type 2) which shall have a dimension of approximately 6 - 12 inch diameter. Length of ingot pieces shall be approximately 40 inches. Each production lot of Type 2 material shall consist of one ingot cast from a production heat and be traceable to the production heat from which it was made. All ingots shall be solid and sound , have a machined finish, be cleaned to eliminate any grain boundary voids, pits, cracks, cold shuts, etc., and there shall be no shrinkage cavity or incompletely melted metal on any part of the surface of the metal.

When acquired, it shall meet Purchase Specification P-117, latest revision.

2. PACKAGING

- a. Tantalum Sheared Pieces (Type 1) will be received for storage as follows:

Containers - sheared pieces shall be packed in new steel 30 gal. drums . All drums shall conform to all requirements of Defense National Stockpile Container Specification C-1, latest revision, except the requirement for "hot dipped galvanized after fabrication" is deleted, and the following is substituted: "The drums shall have a baked epoxy enamel finish on the inside of the lid, and a painted finish on the outside of the drum in accordance with Section 8- Surfaces: Painted".

Pallets - At the time of receipt four drums containing the material shall have been placed on a new wood pallet by the contractor. Each pallet shall conform to the requirements of Federal Specification NN-P-71, latest revision and amendment - Pallets, Material Handling, Wood, Stringer Construction, 2-Way and 4-Way (partial), as follows: Type V, Class 1, Style A, Size 2, Group III or IV, Grade A. The spacing of the center stringers shall be 6 inches from the centerline in lieu of 4 inches. In the event of damage to the pallets, replacement can be made with a suitable or similar type pallet.

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b. Tantalum Ingots (Type 2) will be received for storage placed on new 48" x 40" wooden pallets, with either one ingot or two to three pieces from the same ingot on the pallet*. The number of pieces is dependent on the diameter of the ingot. The pallet shall have the same requirements as the pallet for Type 1 material except that the numbers of stringers shall be three(3) instead of four (4), stringer dimensions shall be 4" x 4", and the outside stringers shall be centered on a line 7" from the end of the deck boards. The base portion of the cradle assembly, which consists of three separate notches to hold each ingot/ ingot pieces in place, shall be attached to the pallet. The top portion of the cradle assembly shall be attached to the bottom portion to cover the ingots. The outside surface of the cradle assembly shall be banded over the notch openings to prevent the ingot from moving during transit.

*A contract modification changed NDSPS P117 Packaging Requirements.

3. MARKING

a. Sheared Pieces - Sufficient aluminum tags, conforming to the requirements of Defense National Stockpile Identification Specification T-1 - Tags: Aluminum, Embossed, latest revision, shall be affixed to each drum and shall be marked with the following information: name of material, form, type and size, lot number, serial drum number (if applicable), name of producer, country of origin, gross weight (pounds avoirdupois/kilograms), net weight (pounds avoirdupois/kilograms), government contract number, Defense National Stockpile Purchase Specification number and date.

b. Ingots - Sufficient aluminum tags, conforming to the requirements of Defense National Stockpile Identification Specification T-1 - Tags: Aluminum, Embossed, latest revision, shall be affixed to each pallet/cradle and shall be marked with the following information: name of material, form, type and size, heat (production lot) numbers, pallet number, name of producer, country of origin, gross weight (pounds avoirdupois/kilograms), net weight (pounds avoirdupois/kilograms), government contract number, Defense National Stockpile Purchase Specification number and date.

In addition, each ingot shall be permanently marked or stamped and have the following information: the name Tantalum or the symbol Ta, percent purity, manufacturer's name or alpha code, and a unique sequential production (heat) lot number. The marking shall be a minimum of one quarter (1/4) inch for letters and numerals, be clearly and easily legible, and be marked at the same location for all ingots furnished.

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c. Weight Certificates and Bills of Lading reflect identifying markings/lot numbers for each cradle/pallet shipped. Shipping instructions issued by the DNSC shall identify material shipped and special instructions, if any, for the shipment. DNSC shall be notified immediately if shipments are received prior to receipt of shipping documents; if shipments are received without identifying marks; or if the markings are not in agreement with those shown on the documents and/or shipping instructions.

4. STORAGE

a. Tantalum sheared pieces and ingots shall be stored in a warehouse to protect the drums or cradles from the weather.

b. Storage integrity shall be maintained through the use of locator cards which shall be prominently displayed on and securely attached to the first stack in each row of material. DNSC storage sites will use the Warehouse Materials Identification Card (DNSC Form 41) for this purpose. These forms, which are specifically designed for use with stockpile material, will be furnished to military depots upon request.

c. Cradles and palletized drums shall be stored in uniform rows and tiers so as to facilitate the taking of an inventory at any time by a physical count and computation.

d. Storage will be kept at least 36 inches below automatic sprinkler heads and overhead structure. Aisles 24 inches wide shall be maintained between stored material and all walls for inspection purposes.

5. PRECAUTIONS TO BE TAKEN

a. Health. Since tantalum is in the form of solid metal ingots, no airborne dusts will be generated. If loose metal must be handled dust should be minimized and respirators and gloves worn.

b. General.

Rough handling may cause extensive damage to drums, pallets or cradles. When being received, if any drums/pallets show evidence of damage, the cradle or drum shall be opened to determine the extent of such damage. If there is no damage to the material, the cradle shall be returned as nearly as possible to its original condition prior to being placed in permanent storage. Damaged drums or pallets would be replaced. Severe damage, shall be reported in the usual manner through the media of an Transportation Discrepancy Report. Proper care shall be exercised in handling and shipping to avoid damage.

6. STORAGE FACTOR

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Ingots and Sheared pieces - 1,000 lbs/sq. foot for docked warehouses; 1,000-2,000 lbs/sq. foot for ground level warehouses or the weight/sq. foot rated for the warehouse the material is stored in.

FOR ADDITIONAL INFORMATION ON THIS COMMODITY, REFER TO THE MATERIAL SAFETY DATA SHEET AND THE MOST RECENT PURCHASE SPECIFICATION.