

## APPENDIX 4-A

## STORAGE OF PLATINUM GROUP METALS

## Description

- a. Platinum is a silvery grayish metal with an atomic weight 195.09. When acquired, platinum will meet Purchase Specification P-41-R.
- b. Palladium resembles platinum, but is brighter and weighs a little more than half as much. Palladium has an atomic of weight 106.4. When acquired, palladium will meet Purchase Specification P-99-R.
- c. Iridium is similar in color to platinum, but with a slight yellow cast, and has an atomic weight 193.1. When acquired, Iridium will meet Purchase Specification P-40-R.
- d. Platinum, palladium and iridium metal and alloys may be in ingot, bar, plate, sponge or other primary refining forms, or may be in fabricated form, such as rod, wire, sheet, gauze, or castings. The current Purchase Specifications require that future purchases be in sponge form. Powder and sponge form have a gray color.

## 2. Packaging

- a. New receipts for platinum and iridium shall be packed in plastic 32 oz. (1 liter), wide mouth, screw cap, semi-rigid, (high density) polyethylene jars, blow molded, and free from defects. Palladium shall be packed in the same type jars except the capacity shall be 64 oz. (2 liter). The average net weight shall be 100.000 troy ounce/ jar for each platinum group metal.
- b. The screw cap shall be of polypropylene and contain a gasket insert of low density polyethylene of 0.008 inch minimum thickness, so as to form a tight closure. The cap shall be tightened as much as possible without rupture and sealed with shrink tape.
- c. Jars shall be packed in new wooden boxes with sufficient non-flammable cushioning to prevent damage. Boxes containing the same lot shall be of the same nominal size and shape and shall contain approximately 600 troy ounces (41-52 pounds avoirdupois) of platinum or iridium and shall not exceed a gross weight of 55 pounds avoirdupois. Each box shall contain six jars. Boxes for palladium shall contain approximately 400 troy ounces (27 pounds avoirdupois) and shall not exceed a gross weight of 40 pounds avoirdupois. Each box shall contain four jars. The wooden boxes shall have cleated ends and shall be equal to the requirements for Type C, Style 2, Federal Specification PPP-B-621 (latest revision). Waivers have been granted for boxes exceeding the gross weight maximum.
- d. After packing, the boxes shall be secured with steel bands or wire, and the corners shall be bored and sealed with a lead seal.
- e. Platinum group metals now in storage are packed as follows:

**APPENDIX 4-A**

**STORAGE OF PLATINUM GROUP METALS**

(1) Each piece (bar or ingot) of platinum, palladium or iridium is wrapped in kraft paper and packed in a wooden box. Each box consists of one lot and contains approximately 563-597 troy ounces (39-41 pounds avoirdupois) and does not exceed a gross weight of 50 pounds avoirdupois.

(2) Powder, sponge, shot and granulations are packaged in plastic jars. Refer to 2a-d above.

(3) Plates, sheets and wire are packed in boxes.

(4) The boxes are secured with steel bands or wire, and the corners are bored and sealed with wax.

**3. Marking**

a. Prior to receipt, each box shall be permanently and legibly marked, in English, on each end, by attaching a punched metal tag with markings as specified on the Purchase Specification.

b. Each plastic container shall be labeled to indicate the name of the contents (platinum, palladium, or iridium), its purity, the refining lot number of that lot, analysis number, gross and net weights, contract number and country of origin.

c. A copy of the packing list shall be placed in a waterproof envelope and placed inside each box. The packing list shall identify the contents of each box and the analytical determinations for platinum group metals and impurities.

d. Each box containing platinum group metal now in storage are permanently and legibly marked on each end. The markings are as specified when purchased.

e. Each piece (bar or ingot) of platinum, palladium or iridium now in storage is cast or stamped with a serial or melt number, percent platinum, palladium, or iridium weight in troy ounces, and Pt, Pd, or Ir (chemical symbols for platinum, palladium, iridium).

f. Each plastic container of iridium in storage is labeled to indicate the name of material, form of the iridium, gross and net weight, contract number and origin.

**4. Storage**

a. Platinum group metals shall be stored on the floor in flat or box pallets, or bin shelves in high security vaults at which access controls and records are maintained.

**APPENDIX 4-A**

**STORAGE OF PLATINUM GROUP METALS**

b. Platinum group metals shall be segregated by composition, by form and by lot. A complete description of each lot will be indicated on a material identification card (DNSC 41) which shall be prominently displayed and securely attached to each stack.

c. Boxes of uniform size will be stored on base floor pallets in uniform rows and number of tiers so as to facilitate the taking of inventory at any time by a physical count and computation.

d. The height of the stack will be governed by the configuration of the storage area, utilization of space, and other storage contingencies, but not less than 36" from the ceiling subject to the load capacity of the floor and stabilizing of the stack.

**5. Precautions To Be Taken**

a. Security. All shipments are high security. Hand-to-hand signature with pickup and delivery within the doors of the respective premises for each transaction is required.

b. Health. None.

c. General. Under no circumstances shall platinum group metals be moved from their original place of storage without authority of the DNSC-OL. When handling, shipping, or storing any platinum group metals, extreme care shall be used at all times to make sure that none of the material is lost or stolen.

6. Average Storage Factors. Platinum group metals will utilize approximately one cubic foot per 1,000 troy ounces.

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

DNSCM 4145.1

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(Platinum - Palladium - Iridium)