Mississippi State University  
Notice of Proposed Sole Source Purchase

189-13

Mississippi State University anticipates purchasing the item(s) listed below as a sole source purchase. Anyone objecting to this purchase shall follow the procedures outlined below.

1. Commodity or commodities to be purchased (make, model, description):

CD-114 Cadmium 114:

110 mg Cadmium metal solid

Assay: 98.69%

Batch: 222140

ZZ-S12 (1) EM Stable Isotope Target Fab Services:

Cd-114 Pellet – 4 mm diameter x ~0.9 mm

Typical Tolerances: Thickness +/- 15%

Uniformity < 10% variation

Outside dimensions +/- 0.5 mm

Ship ~100 mg, charge for 110 mg (material lost during fabrication)

CD-113 Cadmium 113:

13 mg Cadmium metal solid

Assay: 95.10%

Batch: 181440

ZZ-S12 (2) EM Stable Isotope Target Fab Services

Cd-113 Pellet – 4 mm x 79.4 mg/cm2

Typical Tolerances: Thickness +/- 15%

Uniformity < 10% variation

Outside dimensions +/- 0.5 mm

Ship ~ 10 mg, charge for 13 mg (material lost during fabrication)

CD-112 Cadmium 112:

110 mg Cadmium metal solid

Assay: 98.27%

Batch: 155640

ZZ-S12 (3) EM Stable Isotope Target Fab Services:

Cd-112 Pellet – 4 mm diameter x ~0.9 mm

Typical Tolerances: Thickness +/- 15%

Uniformity < 10% variation

Outside dimensions +/- 0.5 mm

Ship ~100 mg, charge for 110 mg (material lost during fabrication)

1. Explanation of the need to be fulfilled by this item(s), how is it unique from all other options, and why it is the only one that can meet the specific needs of the department:

The required stable isotopes need to be highly enriched, which itself makes the list of possible vendors very limited. Additionally, due to the requirements of the Los Alamos National Laboratory (LANL) experiment that these targets are being acquired for, the targets need to come in a particular pressed pellet form with the specified dimensions and tolerances. I have not been able to find any provider who can do both other than the National Isotope Development Center (NIDC). The NIDC is funded by the Department of Energy (DOE) through Oak Ridge National Laboratory (ORNL) to produce samples for DOE funded laboratories, which LANL is.

1. Name of company/individual selling the item and why that source is the only possible source that can provide the required item(s):

National Isotope Development Center

Oak Ridge National Laboratory

1 Bethel Valley Road, Bldg. 5700, Room 111

Oak Ridge, TN 37830-6158

The NIDC is a fundamental provider for highly enriched isotope samples used in nuclear physics experiments, particularly those funded by the DOE. The NIDC interfaces with the User Community and manages the coordination of isotope production across the facilities and business operations involved in the production, sale, and distribution of isotopes. This is the route suggested by my collaborators at LANL and I have not been able to find another source for both providing the isotopic samples and the appropriate target geometry.

1. Estimated cost of item(s) and an explanation why the amount to be expended is considered reasonable:

CD-114 = $277.20

ZZ-S12 (1) = $1,900.00

CD-113 = $164.97

ZZ-S12 (2) = $1,900.00

ZZ-S01 = $1,705.00 (packaging fee for stable isotope described by DOE)

CD-112 = $388.30

ZZ-S12 (3) = $1,900.00

For the highly enriched isotope targets of a highly particular geometry, these are difficult to produce and machine so much of the cost comes from the highly specialized nature of the items themselves. ORNL and the DOE has set the costs to reflect this specialized nature. Additionally, NIDC sends a highly detailed sample composition and geometry data sheet with their targets, which is critical for producing reliable results from my LANL experiment.

1. Explanation of the efforts taken by the department to determine this is the only source and the efforts used to obtain the best possible price:

I have asked other resellers of enriched isotopes and they have only been able to offer the material as powders and will do nothing to form the targets in a particular geometry. The target must come as a punched pellet with particular geometries that match other targets that exist at LANL (which were also purchased by LANL through NIDC). I have also asked many colleagues of mine at both LANL and the National Superconducting Cyclotron Laboratory about who else might provide the targets I need, but no one has offered any additional possibilities than NIDC.

Any person or entity that objects and proposes that the commodity listed is not sole source and can be provided by another person or entity shall submit a written notice to:

Don Buffum, CPPO  
Director of Procurement & Contracts  
[dbuffum@procurement.msstate.edu](mailto:dbuffum@procurement.msstate.edu)  
**Subject Line must read “Sole Source Objection”**

The notice shall contain a detailed explanation of why the commodity is not a sole source procurement. Appropriate documentation shall also be submitted if applicable.

If after a review of the submitted notice and documents, MSU determines that the commodity in the proposed sole source request can be provided by another person or entity, then MSU will withdraw the sole source request publication from the procurement portal website and submit the procurement of the commodity to an advertised competitive bid or selection process.

If MSU determines after review that there is only one (1) source for the required commodity, then MSU will appeal to the Public Procurement Review Board. MSU will have the burden of proving that the commodity is only provided by one (1) source.

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