

Mississippi State University
Notice of Proposed Sole Source Purchase
234-107

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):

Thermo Scientific Orbitrap Exploris 120 Vanquish Flex – PFAS mass spectrometer.

2. 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 State of Mississippi requested that we purchase equipment to enhance the laboratory capabilities including, but not limited to, equipment for water quality testing. The concern for water quality is per-and polyfluoroalkyl substances (PFAS) which are a group of chemicals used to make non-stick coatings, many of these substances are considered unknown and considered carcinogenic.

The mass spectrometer is of a Quadrupole - Orbitrap configuration (an ion trap mass analyzer consisting of an outer barrel-like electrode and a coaxial inner spindle-like electrode that traps ions in an orbital motion around the spindle) delivers high resolution and accurate masses for modes of operation. High-resolution accurate-mass (HRAM) capability provides a fast path to accurate results. The Orbitrap has drag-and-drop method setup with improved scan speed and fast polarity switching as well as advanced Xcalibur software providing comprehensive insights into PFAS contamination, ensuring regulatory compliance and removing the concern of false positives.

This Orbitrap comes with a PFAS kit that replaces Teflon tubing that will reduce potential contamination known to leach from Teflon. The TraceFinder software provides quantitation and screening analysis results. The Curator software helps identify smaller unknown molecules. The Orbitrap is versatile in that it can analyze many other matrices besides water. It would be helpful with food safety testing, pharmaceuticals, and other environmental samples.

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

Thermo Fisher Sales Rep Casey Brunet. Another instrument that can do this work would be an TOF LC/MS (Time OF Flight). The TOF would require a large bench top foot print (41in X 30in), a

hole in the ceiling to accommodate the tall (5ft) stack for molecule flight and extensive exhaust venting, all of which means an expensive lab remodel. The Orbitrap would require much less bench space (36in X 33in) and does not have a stack.

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

The Orbitrap (\$434,930) is used in research applications to elucidate low-abundance, high complexity, or otherwise difficult samples such as PFAS. With a TOF (~\$500,000) you have a range of mass accuracy of about 1-2 ppm and a resolution R = 30000 to 50000. Orbitraps have a mass accuracy in the sub-ppm range and are even better in resolution. Which is important when considering there are more than 40,000 known PFAS and more being discovered.

5. 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:

MSCL has conversed with other laboratories doing PFAS analysis and the consensus is Thermo Fisher Orbitrap is the instrument for targeted and non-targeted analysis of PFAS. Our own on-line research also found Thermo Fisher Orbitrap to be the best investment in cost-effective, advanced analytical instrumentation.

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:

Jennifer Mayfield, CPPO
Interim Deputy Director of Procurement & Contracts
jmayfield@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.