# Mississippi State University Notice of Proposed Sole Source Purchase

# 223-113

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.

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

Low Pressure, Bagless Helium Recovery and Reliquification System. Model numbers: LHeP15 (Liquefier), CPA286IW (Compressor), plus tanks and plumbing

## 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 requested system is a low-pressure, bagless helium recycling system. This system will be used to recover helium boil-off from the NMR facility and recycle this helium gas back to liquid helium. It is critical to our research capabilities because of the recent helium shortage. Helium prices have increased more than 200% over the past two years, and yet helium is essential to maintain the NMR systems at low temperatures for their superconducting magnets. Helium is a non-renewable resource, and a helium recovery system is critically needed to maintain the financial viability of the NMR facility, which serves over 100 researchers (faculty and students) at MSU and nearby.

Most helium recovery systems use a large flexible bag to store helium temporarily before reliquefication. This type of system is not viable for our facility, because there is no room to fit a bag. This system meets the department’s specific needs by storing the helium boil-off in low-pressure tanks, which are much more compact than the bags found on other systems. It is unique because it has been customized to the facility’s needs. Bluefors/Cryomech is the only vendor that offers a low-pressure recovery system capable of keeping up with the boil-off needs of our facility and managing > 15 L of liquid helium per day, while fitting in a footprint of less than 120 ft2 (40 ft by 3 ft). Other vendors contacted were not able to simultaneously meet the functionality of Bluefors/Cryomech’s system while also handling the floor space and helium capacity needs of our specific facility.

This aspect is critical to the useability of this system, as the NMR facility lacks the footprint for a large helium collection bag.

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

Bluefors Cryocooler Technologies, Inc. The proposed system, with a small footprint and nearly closed-loop operation, is a unique system that has been tailored to the NMR facility. Most other systems use a large helium collection bag, which would not fit in the space available.

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

$158,785. This is a reasonable price given the complexity of the system: liquid helium is has a temperature of 4K, and the refrigeration systems are complex. In addition the storage solution (namely, tanks) is a much cheaper alternative to larger bag-type systems.

## 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:

Other vendors were contacted, but none make a bagless system that is required by MSU Chemistry.

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.