NASA Glenn Research Center
June 12, 2026

Specifications:

The vendor will provide high-purity xenon to NASA for use in electric propulsion testing. The procurement should include all associated costs, including shipping as well as the bottle cylinder cost. The Contractor shall provide the Government with total pricing for each of the following xenon quantities for evaluation purposes:

i. 10,000 L
ii. 15,000 L
iii. 20,0000 L

NASA requires Xe with a purity greater than or equal to 99.999% and meets the requirements for impurities listed in Table 1 measuring the impurities in each individual bottle. Each cylinder shall be fit with a rare gas valve or a bellows-sealed valve to eliminate stem leakage. The external connection shall be a CGA 580 valve fitting. Each cylinder shall be labelled with its tare weight and have a minimum of one (1) year remaining on its DOT certification.

Table 1 Maximum Allowable Impurities

Constituent	Allowable Content, measured
Oxygen (O_2)	≤ 0.1 ppm
Water (H_2O)	≤ 0.1 ppm
Carbon Monoxide (CO)	≤ 0.5 ppm
Carbon Dioxide (CO_2)	≤ 0.5 ppm
Carbon Tetrafluoride (CF_4)	≤ 0.1 ppm
Total hydrocarbons (THC)	≤ 0.1 ppm
Nitrogen (N_2)	≤ 1.0 ppm
Hydrogen (H_2)	≤ 2.0 ppm
Krypton (Kr)	≤ 5.0 ppm
Argon (Ar)	≤ 1.0 ppm
Total Impurities	≤ 10.4 ppm (balance xenon)

A certificate of analysis is required for each cylinder to verify purity requirements. Lot impurities or measured impurities prior to any xenon transfer are not valid. Each bottle delivered to the Government shall have a Certificate of Analysis including:

- the quantity of xenon in liters at standard temperature and pressure (after extraction of sample as required for cylinder analysis),
- the actual measured impurity values for that cylinder,
- the measurement uncertainty for each impurity, and

A liter will be defined at standard temperature and pressure conditions of 32 degrees Fahrenheit and 29.92 inches of mercury. Any bottle that fails to comply with the requirements for measured impurity or does not have an accompanying certificate of measured impurity levels for that bottle shall be rejected by the government.