IVGEN POST FLIGHT ANALYSIS
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ABSTRACT STYLE GUIDE
The Intravenous Fluid Generation (IVGEN) Experiment demonstrated the purification of ISS potable water, the mixing of the purified water with sodium chloride, and sterilization of the solution via membrane filtration. On-orbit performance was monitored where feasible and two 1.5-liter bags of normal saline solution were returned to earth for post-flight testing by a FDA-registered laboratory for compliance with United States Pharmacopeia (USP) standards [1]. Current efforts have been focused on challenge testing with identified impurities (total organic carbon), and shelf life testing. The challenge testing flowed known concentrations of contaminants through the IVGEN deionizing cartridge and membrane filters to test their effectiveness. One finding was that the filters and DI resin themselves contribute to the contaminant load during initial startup, suggesting that the first 100 ml of fluid be discarded. Shelf life testing is ongoing and involves periodic testing of stored DI cartridges and membrane filters that are capped and sealed in hermetic packages. The testing is conducted at six month intervals measuring conductivity and endotoxins in the effluent. Currently, the packaging technique has been successfully demonstrated for one year of storage.

REFERENCES