

CIL
EMU CRITICAL ITEMS LIST

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NAME P/B QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
BACTERIA FILTER CARTRIDGE, ITEM 423 (1) DRAIN FILTER, (1) FILL FILTER (2 PER SCU) ----- 6V784967-1	2/2	623FRO3: Restricted flow of drain line bacteria filter. CAUSE: Entrained contamination.	END ITEM: Restricted water flow path through bacteria beads. Unable to drain water from EMU due to clogged drain line in SCU. OPE INTERFACE: Unable to complete water recharge sequence or dump condensate. MISSION: Loss of use of one EMU. CREW/VEHICLE: None.	A. Design - The filter cartridge is packed with iodine impregnated beads to prevent bacteria migration into the LSS. These cartridges are replaced every 12 EVAs. The bacteria filter cartridge has screen covered openings at both ends of a cylindrical bed of iodine impregnated beads. The screens have large openings, 147 microns and are designed solely for retention of the iodine impregnated beads. The total effective flow area for these openings is 0.04 square inches. Filter materials; polypropylene, Kel-F and Fluorfen EFFE or FEP Teflon and stainless steel are corrosion resistant and thus will not generate contaminant particles causing additional pressure drop. B. Test - Component: The item is pressure drop tested for a maximum delta P 0 0.95 psi at 30-35 pph H2O at the vendor after iodine bead packing. Certification: A cartridge was subjected to 15 years worth (515 Pounds) of bacteria containing water (spec challenge solution) during 5/84. Through out the test, the organism killing capability of the cartridge remained within specification requirements. Engineering Changes 42896-488 and -992 have been incorporated to extend the limited life of this item from 6 EVAs to 12 EVAs and were certified based upon actual flight usage/delta P data. Pressure drop testing of cartridges used for two EVAs showed delta P results essentially the same as cartridges drawn at random from finished stores. C. Inspection - Verification of proper iodine and quantity is accomplished during filter packing at vendor. The cleanliness of the filter is maintained to level EN150 per SVMS 3150 and the filter retained in water from the time it is originally packed. The preload spring is 100% inspected for meeting dimensional

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	2/2	4234M03		<p>and force-displacement requirements.</p> <p>There are two radial seals (per cartridge) which prevent internal leakage past the filter. Both interfacing surfaces are 100% inspected to meet dimensional and surface finish requirements.</p> <p>Both O-seals are 100% inspected to meet dimensional and surface finish requirements.</p> <p>D. Failure History - None.</p> <p>E. Ground Turnaround - Tested per FEMU-R-001, Orbiter SCU Checkout.</p> <p>F. Operational Use - Crew Response - Pre/PostEVA: Trouble shoot problem, if no success, during IV in-suit operations, monitor EMU water tank pressures and periodically relieve EMU water pressure by using other SCU. Use other SCU to perform EMU water dump and charge. Special Training - No training specifically covers this failure mode. Operational Considerations - One pound of water is dumped after EMU water recharge to make room in the EMU water tanks for IV generated condensate water. EVA checklist procedures verify hardware integrity and systems operational status prior to EVA.</p>