

12/26/94 SUPERSEDES 12/24/92

ANALYST:

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
CONTAMINANT CONTROL CARTRIDGE, ITEM 480 ----- SV792600-01 (1)	2/1R	480FH03: Restricted flow due to dusting. CAUSE: Vibration due to launch; break through or improper installation of nomex filter.	END ITEM: Clogging of dust filter. Dust is released into the gas stream and the gas flow impedance increases. GFE INTERFACE: Reduced gas flow rate. Increased CO2 levels in the helmet. MISSION: Termination of EVA if gas flow is reduced. CREW/VEHICLE: For single failure, free LION in EMU would be an eye and lung irritant. Possible loss of crewmen with loss of SOP.	A. Design - The LION particles are vibrated and tamped during packaging and then preloaded to minimize dusting during launch vibration. Dust is retained by a felt (Nomex) filter, supported by an aluminum porous plate. Also, the filter pad is stitched onto the teflon screen and is inserted as a unit into the cartridge for packaging. B. Test - Certification - Certification testing completed which fulfills the particulate contamination requirements of the CCC S/AD, S/AD SV792600/2 Design Note 6, Particulate Contamination. The item completed the 15 year structural vibration and shock certification requirements along with post vibration dusting test during 12/84. No Class 1 engineering changes have been incorporated since this configuration was certified. C. Inspection - Visual inspection is done for each cannister before charging to verify proper installation of Nomex filters. D. Failure History - J-EMU-480-004 (1/26/84) LION dust was found in the CCC vent loop parts. This was caused by the LION charging process. Cleaning and inspection steps have been added to the recharging procedures. H-EMU-0000(12/19/84) During CCC certification testing, a high concentration of LION due to inadequate cleaning of the LION containers during recharge. The cleaning procedures have been revised to include bag soaking in cold deionized water. J-EMU-480-1001 (6/18/93) - The 1000 series contaminant control cartridge allowed LION to leak into the EMU vent loop during a SESL test fitcheck due to debanded tape around the LION containment filter. Only 2000 series CCCs which utilize a sewn bag LION containment system will be flown in the future. EC 42906-473-19 absolute the 1000 series CCCs from flight.

CIL
EMU CRITICAL ITEMS LIST

Page: 2
Date: 11/23/94

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2/1R 480FR03:

E. Ground Turnaround -
Tested per FEMU-R-001, LiOH Dust Inspection.

F. Operational Use -

Crew Response -

PreEVA: Troubleshoot problem. Doff and wipe down EMU. Swap
LiOH using spare cartridge. Continue prep.

EVA: When CID data confirms loss of vent flow, terminate
EVA. When LiOH dust is detected exiting the helmet vent,
deactivate the fan, open the helmet purge valve and
terminate EVA.

Special Training - Standard EMI training covers this failure
mode.

Operational Considerations - Flight rules define go/no go
criteria related to EMU ventilation flow. EVA checklist
procedures verify hardware integrity and systems operational
status prior to EVA. Real time Data System allows ground
monitoring of EMU systems.