

USA Integrated Logistics CIL Sheet

SSD92FO044
Revision B

Critical Item: Filter

B/L: 600.26

Total Quantity: 5

System: MPS

05-14-2001

Find Number: F7

Criticality Category: 1

FMEA/CIL No: SSD92FO044

System/Area: MPS/ OPF, Dryden

NASA

PMN/

Part No: ME286-0090-0002

Name: A70-0640/Cap & Plug Set

Mfg/

Drawing/

Part No: Wintec/13267-514-3

Sheet No: GW70-005800/1

Function: Filters test gases to GHe fill, T-0 umbilical system at PD8

Critical Failure Mode/Failure Mode No: Passes contaminants/ SSD92FO044.007

Failure Cause: Manufacturing defect or corrosion

Failure Effect: Possible contamination of the Shuttle Main Propulsion System and damage to the Orbiter SSME's resulting in loss of life/vehicle (ref. SSP CILs: 03-1-0201, 03-1-0204, 03-1-0207, 03-1-0209, 03-1-0258, 03-1-0259, 03-1-0261). This failure is not detectable.

ACCEPTANCE RATIONALE

Design:

- Filter operating parameters
 - Flow: 10 gpm
 - Filtration: >25 micron
 - Pressure Drop: <12 psi
 - Actual Operating Pressure: up to 4500 psi
 - Design Operating Pressure: 10000 psig
 - Proof Pressure: 15000 psig
 - Burst Pressure: 40000 psig
 - Contaminant cap.: 0.4 grams
 - Element collapse pressure: 4500 psig differential
 - Upstream filtration: S70-0695-08 panel, filter A83090 (10 microns)
- Material (filter element and other filter parts)
 - All stainless steel construction
- Filter element construction
 - Single layer, non-sintered, non-calendered, double Dutch twill weave wire mesh cloth.
- Filter construction
 - This filter has a separable type housing and a replaceable element.
- Filter element meets the NSTS 07700, Volume 10 paragraph 3.6.12.1.1.2.2.1 requirement for filter design service life.
- All hardware and gases used in the GSE, from the tank facility to the flight interface, comply with SE-S-0073 and SN-C-0005 for contamination control and component design.

USA Integrated Logistics CIL Sheet

SSD92FO044
Revision B

Test: The ME286-0090 filter procurement specification requires the following tests:

- Each filter element is "bubble point" tested (prior to assembly to the body)
- Each filter is proof pressure tested for no less than three minutes
- Lot representative filters are filtration tested with contaminate dust
- Lot representative filters are vibration tested
- Lot representative filters are (filter element) collapse pressure tested with contaminant dust

05-14-2001

Inspection: - OMI's V6A45 & V6E85 require an annual replacement of these filters.

- OMRSD File VI requires an annual filter replacement.

Failure History: Current data on test failures, unexplained anomalies and failures experienced during ground processing activities can be found in the PRACA database. The PRACA database was researched and no failure data was found on this component or other similar components in the critical failure modes.

The GIDEP failure data interchange system has been researched and no failure data was found on this component in the critical failure mode.

Operational Use:

-Correcting Action:

There is no action which can be taken to mitigate the failure effect.

-Timeframe:

Since no correcting action is available, timeframe does not apply.