



TANK TYPE Simple PMD	MOUNT Lugs, 4	LOCATION Girth	PMD DEVICE Sponge & Vane, note 3
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This is a 19-inch spherical pressure vessel constructed of light-weight titanium. A sponge/vane type propellant management device (PMD) is provided to expel fuel under low or zero gravity conditions. Mounting is accomplished by four (4) tabs parallel with & adjacent to the mid-plane.

ATK Part Number 80480-1

SIZE: 19.03-inch ID Sphere
SIZE: 483-MM ID

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	
Protoflight Test Procedure	50-000648
Bubble Point Test Procedure	50-000650
Fracture Analysis Plan	54-000227
PMD Analysis	54-000237
Design Verification	56-000220
Cleaning	CPP 3981

TANK CHARACTERISTICS			
Operating Pressure, psig	300	Total Volume, ci	3.575
Proof Pressure, psig	450	Prop Volume, lbs	95% FF
Cryo Proof, psig	N/A	Minimum Wall, inch	0.024
Burst Pressure, psig, note 1	815	Max Design Wt, lbs	7.90
Actual Burst, psig	908.53	Flight Actual Wt, lb	7.88
(see 80296-1) PMD Wt, lbs			

PROTOFLIGHT ENVIRONMENTAL TESTS
Wet & Dry Sine & Random Vibration
DESIGN ANALYSIS
Stress Analysis (Wada 325)
Fracture Mechanics
QUALIFICATION TESTS
Qual was performed on 80296-1.
PROTOFLIGHT TESTS

Notes:

- Tooling belongs to ATK.
- This tank is similar to 80304-1 & 80296-1, Design Burst Pressure is that of 80296-1
- Simple Vanes (Four Vanes)
- Fracture Critical
- The PMD design is customer proprietary

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, Bar	20.68	Total Volume, l	58.6
Proof Pressure, Bar	31.03	Prop Volume, l	95% FF
Cryo Proof, Bar	N/A	Minimum Wall, MM	0.610
Burst Pressure, Bar	56.19	Max Design Wt, kg	3.58
Actual Burst, Bar	62.64	Flight Actual Wt, kg	3.57
(see 80296-1) PMD Wt, kg			

- Preliminary Inspection of Product
- Pre-Proof Volumetric Capacity
- Ambient Proof Pressure
- Visual Inspection
- Post-Proof Volumetric Capacity
- Differential Pressure Test & Mass Flow Rate Test
- External Leakage Test
- Tank Assembly Bubble Point Test
- Wet & Dry Sine & Random Vibration Test
- Negative Pressure Capability Test
- Tank Assembly Bubble Point Test
- External Leakage Test
- Radiographic Inspection
- Dye Penetrant Inspection
- Mass Measurement & Final Visual Inspection
- Clean & Data Review

FORGINGS

HEMI P/N	SUPPLIER	Die
80-480061-1 (2)		

TUBE TYPE AND SIZE

TITANIUM	SIZE
80-481009-3, Outlet (2)	.250 O.D. x .020 Wall
80-480003-1, Inlet (1)	.250 O.D. x .020 Wall

TUBE SIZE (Metrics)

80-481009-3, Outlet (2)	6.350 O.D. x .508 MM Wall
80-480003-1, Inlet (1)	6.350 O.D. x .508 MM Wall

VACUUM RATED

Yes

