



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
PMD	SKIRT	GIRTH	VANE & SPONGE

This propellant tank is a 40.5" (1030 mm) spherical pressure vessel constructed of 6AL-4V solution treated and aged (STA) titanium. An internally mounted sponge and vane titanium propellant management device (PMD) provides gas-free liquid propellant at the tank outlet throughout the mission. Mounting is accomplished by a skirt of 24 circumferential tabs with nut plates located near the girth weld.

ATK Part Number 80466-1

SIZE: 40.5-inch Sphere
SIZE: 1030 mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	TANK CHARACTERISTICS	ACCEPTANCE TESTS
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Protoflight Test Procedure	50-000627
Protoflight Test Report	56-000212
Bubble Point Test Procedure	50-000628
Fracture Analysis Plan	54-000216
Materials List	54-000222
Processes List	54-000223
Cleaning (1)	CPP-3901
Cleaning (2)	CPP-3546

Operating Pressure, psig	330	Total Volume, in ³	34,481
Proof Pressure, psig	413	Prop Volume, in ³	34,481
Cryo Proof, psig	N/A	Prop Volume, lbs	882
Burst Pressure, psig	495	Max Design Wt, lbs	48.0
Actual Burst, psig	691	Minimum Wall, inch	0.037

Inspection
Mass Measurement
Ambient Proof Pressure & Internal Volume
Visual Inspection
External Leakage
Bubble Point
Random Vibration
Radiographic Inspection
Penetrant Inspection
Expulsion Test
Bubble Point
External Leakage
Cleanliness & Visual Inspection
Data Review

Notes:

1. Fracture Critical
2. Tank is a derivative of 80338-1.

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, bar	22.75	Total Volume, l	565
Proof Pressure, bar	28.47	Prop Volume, l	565
Cryo Proof, bar	N/A	Prop Volume, kg	400.0
Burst Pressure, bar	34.13	Max Design Wt, kg	21.0
Actual Burst, bar	47.64	Minimum Wall, MM	0.940

QUALIFICATION TESTS
Qual was performed on tank 80338-1.

HEMISPHERE FORGINGS			
HEMI P/N	QTY	SUPPLIER	Die No
80-430061-1	2		

VACUUM RATED
YES

HEMISPHERE FORGING SIZES			
RING P/N	QTY	RING SIZE	
80-338063-1	1	41.2 in OD : 39.8 in ID X 3.87 in LONG	

TUBE TYPE AND SIZE (in.)		
<u>Transition Ti to SS</u>		SIZE
80-466001-1		0.25 O.D. x 0.020 Wall
80-466001-3		0.25 O.D. x 0.020 Wall

TUBE SIZE (mm)	
80-411001-2	6.350 O.D. x 0.508 Wall
80-411001-2	6.350 O.D. x 0.508 Wall

