



<b>TANK TYPE</b> PMD WRAP	<b>MOUNT</b> SKIRT	<b>LOCATION</b> CYLINDER	<b>PMD DEVICE</b> VANE, TRAP, & SPONGE
------------------------------	-----------------------	-----------------------------	---

This Hydrazine propellant tank is constructed of a 6Al-4V titanium liner with the cylindrical portion overwrapped with T1000 carbon fiber/ epoxy composite for an overall diameter of 35.5" X 71" length. Mounting of the tank is provided by a carbon/cyanate ester composite skirt with 12 attach points around the cylinder, and a polar flex plate at the pressurant end. The tank contains an internally mounted propellant management device (PMD) to provide gas free liquid throughout the mission.

**ATK Part Number 80476-1**

**SIZE: 35.5" dia X 71" length**  
**SIZE: 902 mm dia. X 1803 mm long**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000575
Bubble Point Test Procedure	50-000562
Stress Report (3)	54-000184
Dynamics Report (3)	54-000183
Performance Analysis (3)	54-000197
Bond Line Analysis	54-000199
Fracture Analysis Plan (3)	54-000177
Cleaning (tank)	CPP-3911

**TANK CHARACTERISTICS**

Operating Pressure, psi	300	Total Volume, in <sup>3</sup>	52,335
Proof Pressure, psig	375	Prop Volume, in <sup>3</sup>	52,335
Cryo Proof, psig	N/A	Prop Volume, lbs	1,802
Burst Pressure, psig	450	Max Design Wt, lbs	63.75
Actual Burst, psig		Minimum Wall, inch	0.026

**QUALIFICATION TEST**

Qual by similarity on 80425-1.

**ACCEPTANCE TEST**

Examination of Product, Preliminary  
 Volumetric Capacity Measurement  
 Proof Pressure Test  
 Volumetric Capacity Measurement  
 Static Load Test  
 PMD Bubble Point Test  
 External Leak Test  
 Weld Quality Inspection  
 Mass Measurement  
 Final Visual Inspection  
 Final Cleanliness

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	20.68	Total Volume, l	858
Proof Pressure, bar	25.85	Prop Volume, l	858
Cryo Proof, bar	N/A	Prop Volume, kg	817.38
Burst Pressure, bar	31.03	Max Design Wt, kg	28.92
Actual Burst, bar		Minimum Wall, MM	0.660

**HEMISPHERE FORGINGS**

HEMI P/N	QTY	SUPPLIER	Die No
80-391061-1	2		

**ROLLED AND SEAM WELDED CYLINDER**

P/N	QTY	SIZE
80-425016-1	1	35.2 in ID X 34.5 in LONG

**TUBE TYPE AND SIZE (in.)**

Ti 3AL-2.5V	SIZE
80-425011-5	0.375 OD x 0.020 Wall
80-425007-5	0.375 OD x 0.020 Wall

**TUBE SIZE (mm)**

80-425011-5	9.525 OD x 0.508 Wall
80-425007-5	9.525 OD x 0.508 Wall

**Notes:**

- 1: Fracture Critical
- 2: Tank is qualified by similarity to 80425-1
- 3: Documents Prepared for 80425-1
- 4: Same PMD as 80442-1.
- 5: Tube Protectors SK 1420 & SK 1425

