

PROTOFLIGHT ENVIRONMENTS

FOR

GEO Commercial Satellite Hydrazine Tank Assembly

ATK P/N 80395-1

80395-1 was subjected to the following protoflight tests:

Test Sequence	Test Title
1	Examination of Product
2	Vol Determination and Proof Pressure Test
3	Expulsion Efficiency & Pressure Drop Test
4	Radiographic Inspection
5	Vibration Test
6	Tank Assembly Bubble Point Test
7	External Leakage
8	Penetrant
9	Examination of Product
10	Cleanliness
11	Data Review

Sine Vibration (Wet and Dry)

Protoflight Level- Sine Vibration		
Axis	Frequency	Input Level
Thrust (X)	5 Hz to 15 Hz	0.38" DA
	15 Hz to 20 Hz	5.0 g's
	20 Hz to 65 Hz	6.0 g's
	65 Hz to 100 Hz	3.0 g's
Lateral (Y and Z)	5 Hz to 10 Hz	0.38" DA
	10 Hz to 75 Hz	3.0 g's
	75 Hz to 100 Hz	2.0 g's

Test conducted along each of the three orthogonal test axes. The vibration sweep rate shall be 4 octaves/minute.

Test duration is one sweep in each test axis.

For the dry case: Tank is pressurized to 150, \pm 5 psig.

For the wet case: Tank is pressurized to 150, \pm 5 psig and filled to 2212 lbs of water.

Random Vibration (Wet and Dry)

Protoflight Level- Dry Random

FREQUENCY	LEVEL
20-Hz to 1000-Hz	0.1 g ² /Hz
1000-Hz to 2000-Hz	-6dB/oct
Overall	12.61 g _{rms}

Test is conducted along each of the three orthogonal test axes. Test duration is 1 minute in each axis.

Protoflight Level- Wet Random

FREQUENCY	LEVEL
20-Hz to 1000-Hz	0.04 g ² /Hz
1000-Hz to 2000-Hz	-6dB/oct
Overall	7.69 g _{rms}

Test is conducted along each of the three orthogonal test axes. Test duration is 1 minute in each axis.