

PROTOFLIGHT ENVIRONMENTS

FOR

OXIDIZER TANK

ATK P/N 80352-101

80352-101 was subjected to the following protoflight tests:

<u>Test Sequence</u>	<u>Test Description</u>
1.	Preliminary Inspection of Product
2.	Radiographic & Penetrant Inspection
3.	Volumetric Capacity Test
4.	Proof Pressure Test
5.	Post-Proof Volumetric Capacity Test
6.	Cryogenic Proof Pressure Test
7.	Post-Cryogenic Proof Dimensional Inspection
8.	Tank Assembly Bubble Point Test
9.	External Leakage Test
10.	Weld Quality Inspection
11.	Inspection of Product
12.	Vibration Tests
13.	Tank Assembly Bubble Point Test & Ultrasonic Inspection
14.	Weld Quality Inspection
15.	External Leakage Test
16.	Cleanliness Verification
17.	Preparation for Delivery

Sine Vibration (Wet)

SINE VIBRATION TEST REQUIREMENTS		
MODE	FREQUENCY (Hz)	ACCELERATION
LATERAL (X, Y-AXES)	5.0 - 14.0	0.5 INCH D.A.
	14.0 - 40.0	4.0 g 0 TO PEAK
	40.0 - 100	3.0 g 0 TO PEAK
THRUST OR AXIAL (Z-AXIS)	5.0 - 17.1	0.5 INCH D.A.
	17.1 - 40.0	7.5 g 0 TO PEAK
	40.0 - 100	3.0 g 0 TO PEAK

Tank is loaded with 1870, +5/-0 lbs of Freon and pressurized to 285, +5/-0 psig of gaseous nitrogen.

Vibration sweep is applied at a sweep rate of 6 octaves/minute minimum in each of the three orthogonal axes.

Random Vibration (Wet)

RANDOM VIBRATION TEST REQUIREMENTS		
MODE	FREQUENCY (Hz)	POWER SPECTRAL DENSITY
X AXIS ONLY	20 - 400	$0.015g^2/HZ$
	400 - 500	+13.2db/Octave
	500 - 1000	$0.04g^2/HZ$
	1000 - 2000	-6.0db/Octave

Tank is loaded with 1870, +5/-0 lbs of Freon and pressurized to 285, +5/-0 psig of gaseous nitrogen.

Tank is subjected to vibration levels for 1 minute, +0.1/-0 minute in the X axis only.