

PROTOFLIGHT ENVIRONMENTS
FOR
WILD GEESE OXIDIZER TANK ASSEMBLY
ATK P/N 80481-1

Heritage Tank Shell qualified to proof pressure of 550 psig and Burst Pressure of 650 psig

80481-1 was subjected to the following protoflight tests:

<u>Test Sequence</u>	<u>Test Description</u>
1	Preliminary Inspection of Product
2	Pre-Proof Volumetric Capacity, Ambient Proof Pressure, Visual Inspection, and Post-Proof Volumetric Capacity
3	Differential Pressure Test & Mass Flow Rate Test
4	External Leakage Test
5	Tank Assembly Bubble Point Test
6	Sine and Random Vibration Test (Dry & Wet) & Visual Inspection
7	Negative Pressure Capability Test
8	Tank Assembly Bubble Point Test
9	External Leakage Test
10	Radiographic Inspection
11	Dye Penetrant Inspection
12	Mass Measurement & Final Visual Inspection
13	Cleanliness Verification & Packaging
14	Data Review

Sine Vibration (Dry)

Protoflight Sine Vibration Levels (Dry)

<u>AXIS</u>	<u>FREQUENCY (HZ)</u>	<u>ACCELERATION (G) (0-PEAK)</u>	<u>SWEEP RATE</u>
All Axes	10-24 24-130	0.5 in. DA 12.5	4 oct/min

Tank is pressurized to 150-160 psig.

Sine Vibration (Wet)

Protoflight Sine Vibration Levels (Wet)

<u>AXIS</u>	<u>FREQUENCY (HZ)</u>	<u>ACCELERATION (G) (0-PEAK)</u>	<u>SWEEP RATE</u>
X- and Y-axis	10-24 24-130	.5 in DA 12.5 g	4 oct/min
Z-axis	10-24 24-55 55-85 85-130	0.5 in. DA 12.5 g 23.75 g 12.5 g	4 oct/min

Tank is filled with 61.1, +1/-0 lbs of PF 5060 test fluid and pressurized to 150-160 psig.

Random Vibration (Wet and Dry)

Random Vibration Levels Dry and Wet

<u>Axis</u>	<u>FREQUENCY (HZ)</u>	<u>LEVELS</u>	<u>DURATION</u>
All Axes	20-80 80-600 600-2000 Overall G-rms	+6dB/Octave 0.2G ² /Hz -6dB/Octave 13.9	60 seconds per axis.

- 1.) The 13.9 G-rms random vibration spectra may be split into two bands, if necessary, to meet vibration shaker equipment limitations.
- 2.) For the wet test, the tank is loaded with 61.1, +1/-0 lbs of PF 5060 test fluid and pressurized to 150-160 psig.

Negative Pressure Capabilty Test

Tank evacuated to 0.2 torr, +0.1/-0 and held for 5 minutes, +15/-0 seconds.