N72-30395

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TEST REPORT TR-262

CASE FILE COPY

PERFORMANCE TEST REPORT

JPL P/N 71 X 12400 ETCHED DISC FILTER

TEST PERFORMED BY

Wintec Corporation
5223 West Imperial Highway
Los Angeles, California 90045

TEST PROGRAM AUTHORIZED BY

Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, California

Contract No. P.O. AQ-577698

APPROVED BY: F B Jones DATE: 5-1-72

F. B. Jones, Project Engineer

APPROVED BY: J R Buckingham DATE: 5-2-72

J. R. Buckingham, Chief Engineer

This work was performed for the Jet Propulsion Laboratory, California Institute of Technology, sponsored by the National Aeronautics and Space Administration under Contract NAS7-100.

1.0 Scope

A glass bead test was conducted with a JPL supplied etched disc filter assembly to determine the largest diameter spherical glass bead that would transmit through the JPL P/N 71 X 12400, S/N 002, filter assembly.

2.0 Authority for Glass Bead Test

The glass bead test discussed herein was authorized by Jet Propulsion Laboratory Contract No. P.O. AQ-577698.

3.0 Conclusion

3.1 The largest glass bead transmitted through the JPL P/N 71 X 12400, S/N 002, filter assembly was 16 microns in diameter.

4.0 Hardware Description

4.1 The glass bead test was conducted with a JPL supplied etched disc filter assembly P/N 71 X 12400, S/N 002. The micron rating marked on the outside of the filter case was 15 micron absolute. The filter assembly inlet and outlet tubes were terminated with 1/4" "B" nuts (AN fittings).

5.0 Glass Bead Test

5.1 A glass bead test was conducted with one JPL 71 X 12400 etched disc filter assembly S/N 002.

5.2 The filter assembly was installed into a test system similar to that shown in Figure 1. A mixture of deionized water and 50 mg of APM F-9 glass beads was loaded into the mixture chamber. The system was pressurized causing the water-bead mixture to flow through the disc filter assembly. The water glass bead mixture in the mixing chamber was agitated during the complete flow period. The effluent from the test specimen flowed through a 0.45 micron membrane. Any glass beads transmitted through the disc filter assembly were trapped upon the membrane. After the test the total membrane was scanned with a 40X and 100X binocular microscope using a calibrated reticle to measure the diameter of the largest glass bead that passed through the disc filter assembly. The largest glass bead found indicated the absolute micron rating of the filter assembly. The size distribution for the F-9 glass bead mixture is shown in Table I.

5.3 The largest glass bead detected was 16 microns in diameter. There were approximately 16 beads 15 to 16 microns in diameter on the 0.45 micron membrane. In addition, there were many beads with a diameter of less than 12 microns.

5.4 The absolute micron rating of the JPL P/N 71 X 12400, S/N 002 filter assembly was 16.0 microns.

5.5 In addition to the normal clear transparent beads the following materials were found on the membrane. The noted materials are foreign to normal glass bead tests.

Quantity	Size	Description
1	25 micron	Milk white, opaque spherical object - not a glass bead used for test.
4	18.9 X 25.2 micron	Reddish brown, opaque, irregular shape.
10	12.6 X 18.9 micron	Bright green transparent crystals.
3	25 micron	Bright red transparent objects with concoidal fractures.
1	20 X 1600 micron	Blue and clear transparent fiber.
1	20 X 266 micron	Blue and clear transparent fiber.

Table I

Size Distribution F-9 Glass Bead Mixture

Diameter of Bead (microns)	Per Cent by Weight
0-2	0.04
2-5	2.3
5-10	22.1
10-15	37.4
15-20	19.0
20-25	9.3
25-30	0.6
30-40	0.8
40-50	1.5
50-60	1.9
60-70	2.6
70-80	2.4

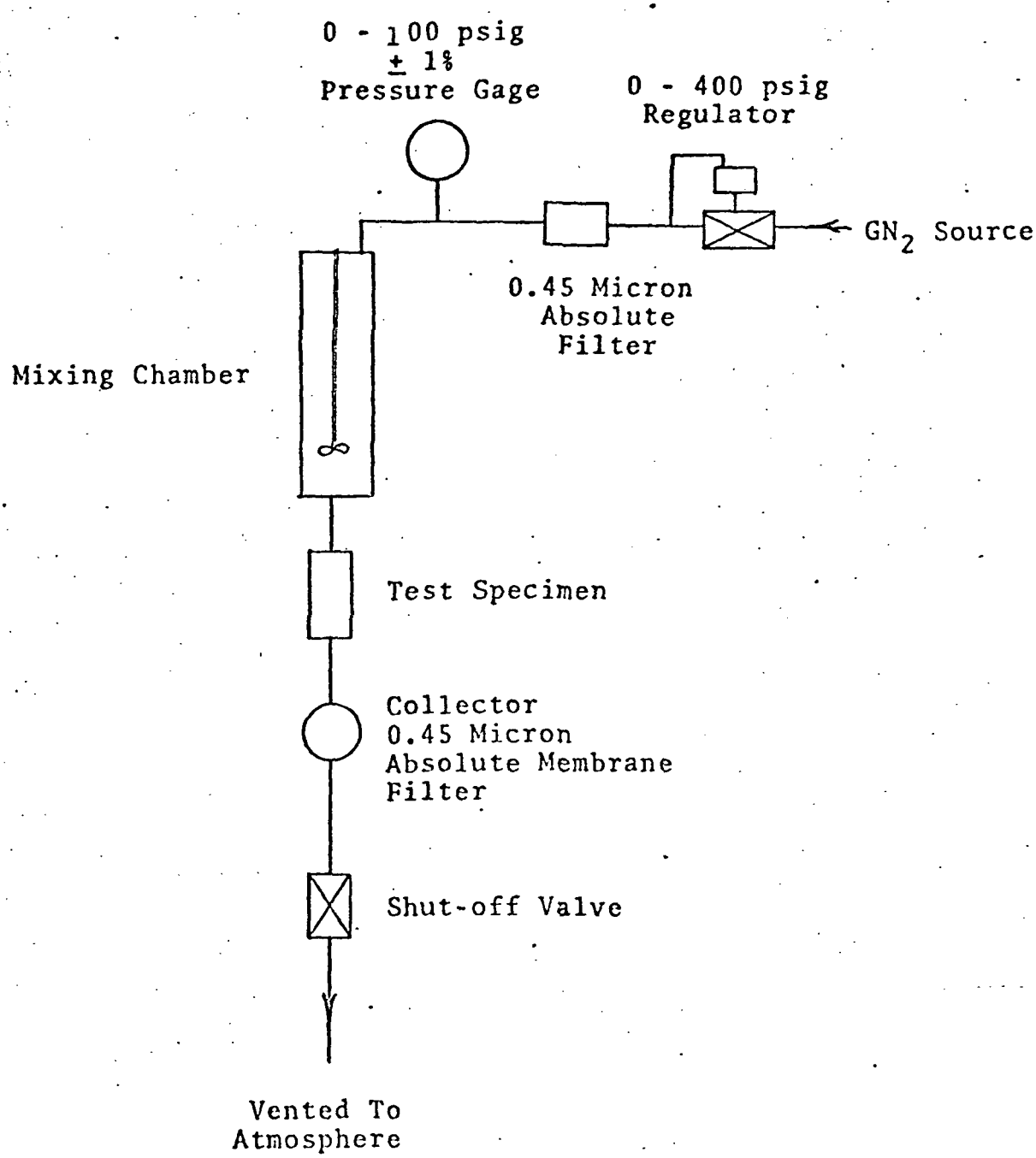


FIGURE 1

GLASS BEAD TEST SYSTEM