

MOISTURE INGRESS TEST FOR AIR CONDITIONING REFRIGERANT HOSES**Application**

This procedure is used to measure the amount of moisture that permeates the hose samples when they are subjected to a humid environment with vacuum being drawn on the I.D. of the hose samples.

Apparatus Required**Humidity Cabinet**

Thermotron or equivalent, maintained at 50 +/- 2 °C and 85 +/- 5 % relative humidity

Oven

Blue M, or equivalent, maintained at 100 +/- 2 °C

Balancer

Mettler, or equivalent, balance capacity of 160 g with an accuracy of +/-0.0001 g

Desiccator

With a capacity for one set of cold traps

Vacuum Pump

With a capacity of 95 kPa

Vacuum/Cold Trap System**Materials Required****Distilled Water****Dry Nitrogen Gas**

Laboratory grade

Cold Bath

Maintained at -70 °C or lower

Date	Action	Revisions
2001 09 24	Revised	Editorial – no technical change A. Cockman
1990 01 04		

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Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

Throughout this test procedure, there are references to corresponding numbers shown in the Schematic Diagram of Test System identified as Figure 1.

1. Install the test assemblies in the humidity cabinet by plugging one end-fitting and attaching the other end to the vacuum lines located in the cabinet. Arrange the test assemblies to maximize surface exposure to test chamber ambient conditions without bending the sample in an arc of a radius smaller than 254 mm.
2. Seal the humidity cabinet and set the controls to maintain a dry bulb temperature of 50 +/- 2 °C and 85 +/- 5 % relative humidity.
3. Thoroughly clean all vacuum traps, inside and out. Then place the traps in an oven set at 100 +/- 2 °C until thoroughly dry.
4. Remove the traps from the oven, transfer to drying desiccator and allow them to cool to room temperature. Weigh each trap to the nearest 0.5 mg.
5. Install the traps in the test system (Item 5, Figure 1), in the cold bath maintained at -70 +/- 2 °C or lower throughout the test.
6. After all connections are made, turn on the vacuum pump and open Valve No. 2 and then Valves No. 11 and 12. Valve No. 9 should be closed.
 - a. A quick leak check can be done by closing Valve No. 12 for about 15 seconds and noting any vacuum decay on Gage No. 6. If there is any vacuum loss, the leak should be located, sealed and the system rechecked.
 - b. Open Valve No. 12.
 - c. Evacuate the system to a vacuum of 95 kPa or greater and run for one (1) hour. Then close Valve No. 12 for 30 minutes. If there is any detectable loss of vacuum, the test is to be discontinued. The leak is to be sealed and this section 5 is to be repeated.
7. After one conditioning period (24 hours minimum), or 48+ hours, representing one calculation period, remove trap(s) and replace with properly prepared traps per the procedure described in Step 8.