



-- MEMORANDUM --

March 27, 2006

Subject: **MIL-STD-883G, Test Method 1014.12 – “REVISION”**

Reference: IsoVac No. R - 4169

The new revision of MIL-STD-883G, Test Method 1014.12 was released effective 28 February 2006. This memo is to bring to your attention the following changes associated with “*radioisotope leak test procedures*” included in this specification revision.

**The specification now includes:**

- **2.2 Test condition B<sub>1</sub>, radioisotope fine leak**
- **2.7 Test condition B<sub>2</sub>-radioisotope gross leak.**
- **2.8 Test condition B<sub>1</sub> and B<sub>2</sub> – radioisotope gross/fine combination leak.**
- **3. PROCEDURE.**  
*[This procedure states that B<sub>2</sub>, (gross), can be run before B<sub>1</sub>, (fine), or in combination as B<sub>1</sub>/B<sub>2</sub>, (gross/fine combination). It also states that for “... condition B<sub>1</sub>/B<sub>2</sub> only, devices may be batch tested and/or individually remeasured for acceptance...”]*
- **3.2 Test condition B<sub>1</sub>, radioisotope fine or B<sub>1</sub>/B<sub>2</sub> Combination gross/fine leak test.**

*[The procedure now clarifies the methods of measuring devices with multiple measuring options. Many ambiguities have been removed. The test for gross-leak may now be applied to small cavity devices that meet conditions of the procedure.]*

The new test method can be reviewed on the following link:

<http://www.dscc.dla.mil/Programs/MilSpec/listdocs.asp?BasicDoc=MIL-STD-883>

### ADVANTAGES OF THIS REVISION:

1. Including the Radiflo® “gross” and “gross/fine combination” tests allows devices to be leak tested in an “all dry-gas” environment, allowing accurate re-testing without liquid immersions, (which can cause changes in subsequent “measured leak rates”.) That also allows the customer, (or device user), to leak test devices for incoming inspection using a dry-gas leak test, (something they could not do with devices that had already been through bubble testing at the manufacturer).

2. The “Combination” test allows devices to be gross and fine tested in one pressurization cycle.

As an example: batches of devices can be tested for both gross and fine leak to  $5 \times 10^{-8}$  atm cc/sec. with less than four minute pressurization time.

3. This specification change allows the elimination of the costs for materials, equipment, and labor to perform the fluorocarbon bubble testing. It can also eliminate the costs for helium gas, equipment, and labor, as well as elimination of those long helium pressurization times.

IsoVac Engineering, Inc. can provide a complete technical explanation of the details, accuracies, and sensitivity limits obtainable with these radioisotope test procedures. The IsoVac Radiflo leak detection equipment, using the radioisotope Krypton85, is designed specifically for the performance of these test procedures. It automatically performs the gross leak test, the gross/fine combination leak test, with fine leak tests to sensitivities as high as  $10^{-13}$  atm cc/sec.