



INSPECTION • ANALYSIS • TESTING

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Attn: Internal Vapor Analysis Group
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Internal Vapor Analysis™ Submission Form

Client: _____ Date: _____
Company: _____ P.O. No.: _____
Address: _____ Rel No.: _____
Tel: _____
E-mail: _____ Fax: _____
[] E-mail Results? [] Fax Results?

of Samples: _____

Package Type(s): _____ Do samples require ESD precautions during analysis? [] YES [] NO

PACKAGE HERMETICITY ANALYSIS

Hermeticity Testing

[] Helium Fine Leak [] Perfluorocarbon Gross Leak
[] Specialty Leak Rate Testing
(specify gas/solvent of interest other than Helium)

Leak Site Identification

[] Fluorescent Dye Impregnation/Cross-Sectioning
[] Helium Sniff Testing

PACKAGE INTERNAL VAPOR ANALYSIS See reverse side for description of test methods.

SOP MEL-1053: Internal Vapor Analysis - Commercial Practice
[] IVA (sample volumes >0.01cc) [] High Resolution IVA (HR-IVA) (sample volumes <0.01cc or vacuum sealed)
SOP MEL-1018: Internal Water Vapor Content - DSCC Suitability for Military Devices
[] Qualification ATT attached? [] Yes [] No [] QCI [] Other
SOP MEL-1070: Gas Analysis of Sealing Chamber Atmosphere (sampling cylinders available from ORS).
SOP MEL-1080: Identification of UNKNOWN volatile organic compounds by IVA/GC/MS.

Prebake [] None [] 16-24 Hrs. @ 100°C [] Other:
Device Test Temperature [] 100°C [] Other:
Special Puncture Site Required? [] No [] Yes; Location:
Wall Thickness at Puncture Site [] Mils: [] Unknown
Failure Criteria [] 5000 ppmv Moisture [] Other: [] None
Test Quantity [] All [] 3 if no failures, 5 with any failures [] 3 if no failures, 5 with 1 failure, stop after 2 failures [] Other:
Device Internal Pressure [] ~1 ATM [] Other:
Device Internal Volume [] _____ cc
Device / Cylinder Fill Gas [] Nitrogen [] Nitrogen/Helium [] Air [] Other:
Cylinder Pressure [] ~1 ATM [] Other:

Report Option - Mass Spectra Report (AMU vs. Intensity)

MATERIALS / ADHESIVE OUTGASSING STUDIES

[] Headspace GC/MS by Thermal Desorption
[] Outgassing Analysis by ORS Glass Ampule Sealing Method
Analytical Technique: [] IVA [] IVA/GC/MS
Pre-Bake / Test Conditions: _____

Return Shipment
UPS: [] Red [] Blue [] Ground
Fed Ex: [] Pr. 1 [] Std. [] Econ.
Other: _____
Acct. #: _____

Additional Instructions or Restrictions

DESCRIPTION OF TEST METHODS

SOP MEL-1053: Internal Vapor Analysis – Commercial Practice

This test procedure is used for testing hermetic devices in accordance with ORS' Commercial Practice for Internal Vapor Analysis. This test method extends the scope and capabilities of traditional Mil-Std 883, Test Method 1018 analysis. It permits variations to the procedure and/or device test conditions to achieve the best test conditions for specific client applications. Client specific protocols may be established for maximum accuracy and sensitivity for product monitoring applications, process development, R&D, materials evaluations and Failure Analysis projects. The data is not subject to inclusion in the annual retention report to DSCC and all records regarding these tests are confidential. Contact ORS for a copy of this extended test method.

- **IVA:** Internal Vapor Analysis utilizing a Quadrupole Mass Spectrometer for sample volumes greater than 0.01cc.
- **HR-IVA:** High Resolution Internal Vapor Analysis utilizing a custom compact Time-of-Flight (TOF) Mass Spectrometer designed specifically for sample volumes less than 0.01cc and/or vacuum sealed devices.

SOP MEL-1018: Internal Water Vapor Content – DSCC Suitability for Military Devices

This test procedure is used exclusively for testing hermetic devices in accordance with Mil-Std-883 or 750, TM 1018, Procedure 1 per the conditions of "Suitability" status granted by the Defense Supply Center Columbus (DSCC). No variations are permitted to this procedure or to the device test conditions. Furthermore, all tests performed per this procedure are subject to inclusion in the annual retention report to DSCC and all records regarding these tests are subject to audit and inspection by the U.S. Government.

SOP MEL-1070: Gas Cylinder Analysis of Sealing Chamber Atmospheres

This test method quantitatively measures the process sealing gases sampled from sealing chambers and/or gas supply lines using a specially prepared sampling cylinder. Sampling procedures are described in the instructions provided with the sampling cylinders. Contact ORS for availability and retail sampling cylinders.

SOP MEL-1080: Identification of UNKNOWN Volatile Organic Compounds by IVA/GC/MS

This test method is used to identify unknown volatile compounds that may be detected in IVA test methods (identified as UNKNOWN compound(s)) but may not be conclusively identified due to the complexity or trace quantity of the mass spectra. The method uses IVA inlet technology interfaced with GC/MS. Standard hermetic devices or individual materials sealed in gas ampules may be analyzed. The technique is useful in understanding the chemical processes of material outgassing and chemical reactions from environmental stress.

SOME IMPORTANT REMINDERS

- Please provide a valid Purchase Order and, if requested by your company, a Release Number.
- Please be sure to specify all and any Additional Instructions or Restrictions that should be followed during sample handling, testing or shipment.
- Unless otherwise requested, test reports and samples will be returned via UPS Ground.
- All shipping and handling fees associated with the transportation of samples to and from our testing facility, as well as special courier fees for expediting test reports, are the responsibility of the client.
- Standard tests and analyses are typically completed within 1 - 2 working days. Methods development and extraordinary applications may extend this time frame.
- On-site visits are encouraged and we welcome your personal involvement during sample analysis.
- Volume discounts are available. Please contact our Sales Department for information.
- For further technical information, please contact the Internal Vapor Analysis Group at (315) 736-5480.