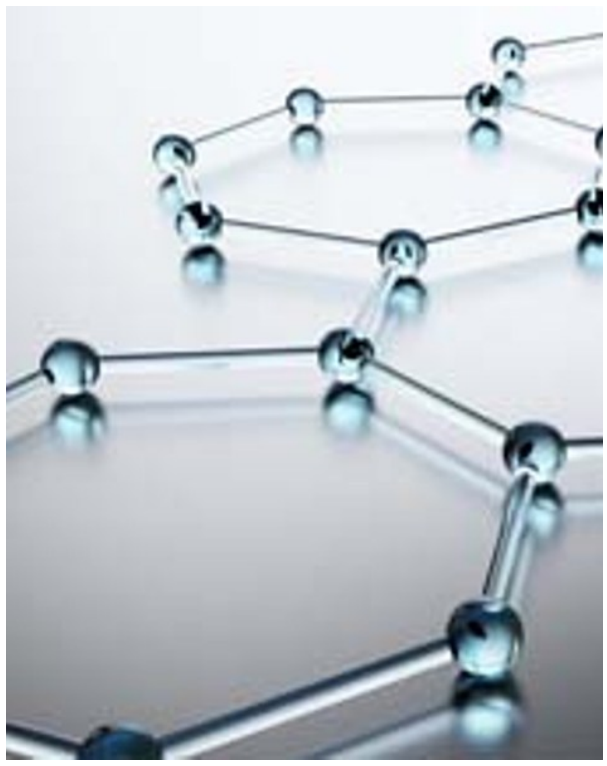
ONEIDA RESEARCH SERVICES, INC.

ORGANIC MASS SPECTROMETRY

Gas chromatography/mass spectrometry (GC/MS) is an analytical method that combines the separative features of gas-chromatography with the identification capabilities of mass spectrometry to identify unknown organics in a sample. It is a natural complement to standard IVA® testing.



GC/MS testing allows for comprehensive testing of a variety of different substances and sample matrices, from individual compounds to complex mixtures and polymers, offering a level of sensitivity, speed and analysis that cannot be beat. ORS offers organic mass spectrometry testing services and method development services to clients across a variety of industries and a wide range of products.

Oneida's GC/MS analysis services can be performed via Static Headspace, solvent extraction and direct injection, direct air injection, residual solvent analysis, gas cylinder analysis, IVA® of hermetic devices, and outgassing of samples sealed in ampoules. Testing is qualitative, semi-quantitative, and can be customized to suit your analytical needs.

Testing capabilities and a partial list of applications are presented below.

Capabilities/Applications

- **Gas Chromatography/Mass Spectrometry (GC/MS):** Common applications of ORS' GC/MC analysis services include contamination identification, material outgassing studies, purity determination, and identification of "unknown" compounds in bulk organics.
- **Internal Vapor Analysis® Gas Chromatography/Mass Spectrometry (IVA®/GC/MS):** Used for the analysis of organic constituents in the cavity of hermetic packages and ampoules, identifying of volatile and semi-volatile organics. Package volumes as low as 8 nL can be tested.
- **Static Headspace/Gas Chromatography/Mass Spectrometry:** A useful technique for the analysis of volatile and semi-volatile organics off-gassing from low concentration components in bulk materials, including solid and liquid matrices.
- **Direct Air Injection/Residual Solvent Analysis/Gas Cylinder Analysis/Gas Chromatography/Mass Spectrometry:** Used to analyze components of gas phase samples for volatile and semi-volatile organics. Incorporates Liquid N2 cryofocus for improved chromatography and sensitivity. Samples can be whole air/gas samples

TEST SUBMISSION FORMS

Gas Analysis Form - NY
Gas Analysis Form - CO
Component Submission Form - NY

TESTING METHODS

MIL-STD
ASTM
JEDEC
IEC
TELCORDIA
ICP

Search

collected in gas sampling cylinders provided by ORS, pharmaceutical products in hermetic packages, or other suitable containers containing gaseous samples.

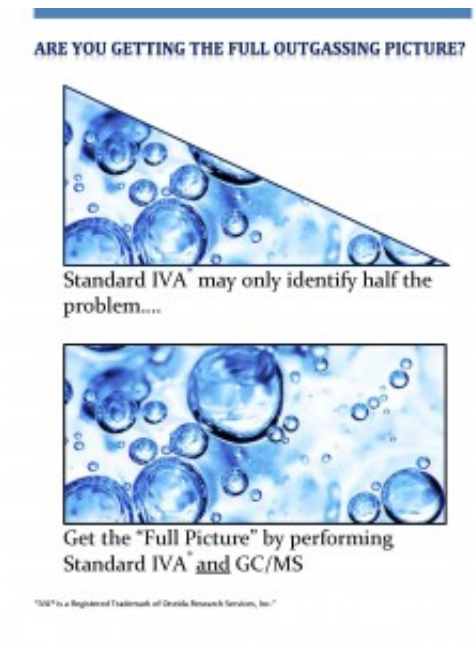
Test Method

MEL-1080: Identification of Unknown Organic Compounds by IVA®/GC/MS

This test method is used to identify unknown organic compounds that may be detected by IVA® test methods but may not be conclusively identified due to the trace quantity or complexity of the mass spectra. Standard hermetic devices, gas cylinders or individual materials sealed in glass ampoules may be analyzed. The technique is useful to understand the trace contaminants, chemical processes of material outgassing and chemical reactions from environmental stress for long-term reliability of critical components:

Test Conditions

- Time/Temperature Preconditioning
- Variable Pre-bake Temperature (up to 1100°C)
- Adjustable AMU Scan Range and Speed
- Variable Data Acquisition Time
- Flexibility in Sample Puncture Location



How IVA and GC/MS can work together to give you the full picture ›

The Format of GC/MS IVA® Results

- Semi-Quantitative Results
- Discussion and Summary of analysis
- Tentatively Identified Compounds (TIC) Summary page using NIST'11 Mass Spectral Database (>243,000 spectra)
- Estimated Concentrations, Chemical name and Chemical Abstract Services (CAS) identifications
- Chromatograms and overlays of Chromatograms and Control samples highlighting areas of interest
- Individual peak mass spectra available
- Customized report formats available. Call to discuss options.

- GC/MS Standard Sample Report

GC/MS Test Capabilities

- PPB range sensitivity
- Typical amu range 35-550. Instrument capability of 1.6 to 1050 amu
- Customized instrument temperature programs
- Scan, SIM (Select Ion Monitoring), and synchronous SIM/Scan capability to improve detection limits for specific compounds of interest
- Negative EI (electron impact)
- Flexibility in sample holding temperature during analysis
- Flexibility in sample pre-bake times
- Flexibility in test protocol

Gas Analysis Services Customized to Fit Your Needs

Our experienced technical staff is available to discuss your specific application and recommend a test plan that will fit your individual needs. Contact us at 1 (855) ORS LABS.

Learn more about which form of analysis is right for you ›