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**EMSL Analytical, Inc.** is a full service analytical testing laboratory, which has been providing materials, forensic, industrial hygiene, indoor air quality, environmental, and chemical analysis services since 1981. Our experienced staff of PhD scientists, technical professionals and our continuously expanding roster of analytical instrumentation are increasingly called upon by clients to solve problems, answer questions, and respond to a wide spectrum of challenges from their customers, partners, and internal operations.

Our project scientists can design and implement a testing program that accomplishes your specific goals. We often function as "virtual resources" to our clients, complementing their own capabilities.

In addition, we have successfully provided failure analysis and comparative product performance evaluations for a wide range of clients. Our technologists work closely with your people to devise efficient and economic test strategies, methods, and matrices.

Contact the Materials Science Division at EMSL Analytical to turn our capabilities into effective solutions for your business.



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#### LOCATIONS



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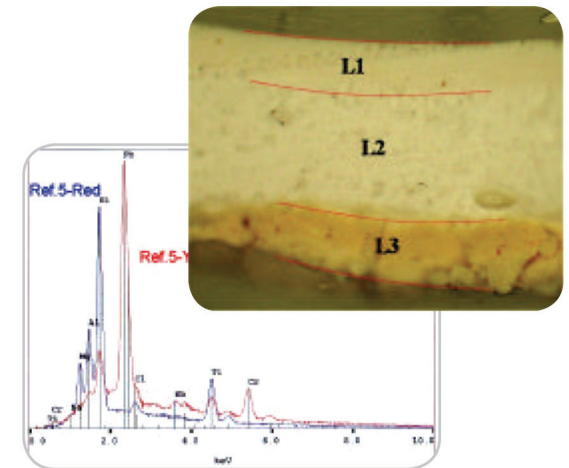
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## Materials Science Division

Service Information for Paint Analysis



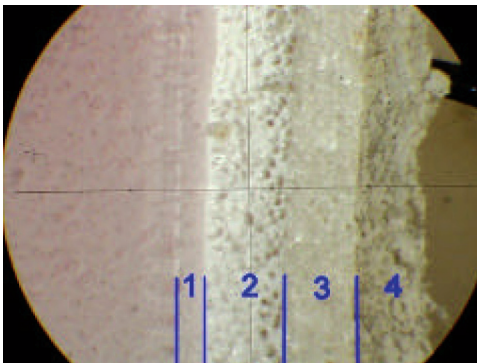
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# Paint and Coatings Analysis:

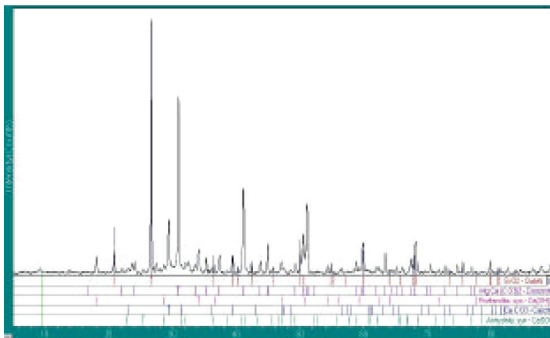
EMSL Analytical Inc. routinely tests paint for everything from purity of the pigments and identification of paint type after application to matching paint in accidents.

Paint pigments such as lead carbonate and vanadium pentoxide have been linked to health issues and are present in many older paints. EMSL can detect these pigments and can also let you know what layer they are in.



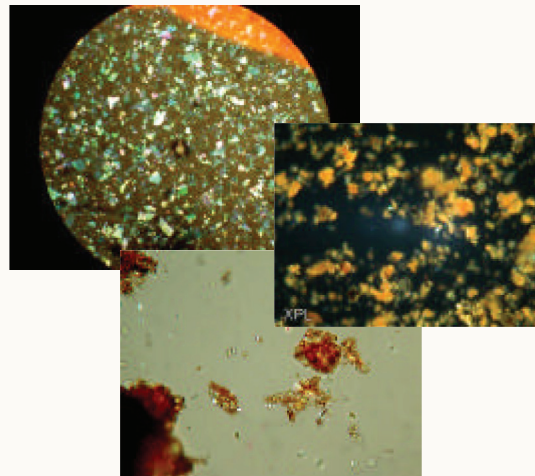
*Cross-section showing paint thickness*

In addition, each layer can be classified as latex, silicon, acrylic, etc. The mil thickness is also easily measured.



*XRD spectra displaying the crystalline components within a paint layer.*

Purity of components is important to the final product. The most brilliant paint coatings applied to antique automobiles can only be achieved through exacting standards. Specialty paints such as epoxies, thermal setting polymers and powder coats can be analyzed to ensure purity.



*Optical microscopy images of powder coat and acrylic pigments. The pigments in the upper left image include microscopic mica to add "sparkle" to a powder coat.*

Thermo-gravimetric analysis (TGA) and Differential Scanning Calorimetry (DSC) can determine specific melting points, transition temperatures and liquid/solid contents. X-Ray Diffraction Spectrometry (XRD) determines type and concentration of crystalline components. Fourier Transform Infrared Spectrometry can determine the type of paint and many of its component materials. Microscopy using optical and electron microscopes is useful for identifying solid components and measuring particle size and layer thickness.

## Questions Commonly Asked Include:

- ◆ Is our supplier giving us the right paint?
- ◆ Does the paint in our home contain dangerous pigments?
- ◆ Why does our powder coat peel loose?
- ◆ Did the contractor apply enough paint to the walls?
- ◆ Why is the paint bubbling and pulling loose from our walls?
- ◆ Does the paint on the dent in our vehicle match the neighbor's car?
- ◆ Why does this batch display less brilliance than the last batch did?
- ◆ Is our supplier using the right size mica and calcite?
- ◆ What is the melting and flash point of our spray paint?
- ◆ Is the paint in our building latex or acrylic?

EMSL has the expertise needed to tailor analysis to meet your needs and help solve manufacturing, contamination and processing problems.