

Typical Results of Car Paint Analysis

Microscopy

Microscopy is a very simple and definitive way of analyzing paint samples. The presence of a different number, thickness and coloring of layers can qualitatively show the common or different origin of the paint samples. Each paint sample had two or three layers, with the surface layer being the color of the paint, and the second and third layers lighter and duller colors. The layers were generally of similar width. Limitations of microscopy may be significant when the layers are difficult to distinguish, or when the car has been repainted in some areas.

Visible Reflectance Spectrophotometry

Typical results of this analysis can be seen in the accompanying spectral results document. If larger samples that cover the entire sample port of the integrating sphere are used, then more reliable and reproducible results are ensured. It is also important that removable tape is used, so that the paint sample can be removed from the tape without damage, and can be used again. Multiple scans of the same sample are recommended to improve the confidence in data analysis.

IR Reflectance Spectrophotometry

Typical results of this analysis can be seen in the accompanying spectral results document. The shape of the reflectance curve in this type of analysis is a more important than the absolute amplitude. As in the visible reflectance spectroscopy, multiple scans are useful in qualifying data, as reproducible variations in the spectra from different paint samples suggest different origins of these paint samples. It is also important that the reference laser passes through the center of the paint sample. Results are unsatisfactory when the analyzed at the edge of the sample. A cork borer or razor blade usually works to create the correct size of paint sample.