



Rubber Compound Analysis and Formula Reconstruction

Abstract

Four different cured compounds representing radical passenger tire tread, radiator hose, oil pan seal and engine gasket products were analyzed. A proprietary computer software program was used to reconstruct the formulations based on the analytical data.

The analyses were performed using Acetone Extraction, Pyrolysis, Infrared Spectrophotometry, High Performance Liquid Chromatography, Gas Chromatography, Leco Sulfur Determinator, Atomic Absorption Spectrophotometry and Gas Chromatography/Mass Spectrophotometry.

Following the analyses and reconstructions, the actual recipes were given to the analytical laboratory and a comparison made. This comparison showed the reconstructed formulations to be very similar to the actual recipes.

To obtain a full-text copy of this paper, please email Tom Knowles or visit Rubber Division, ACS at www.rubber.org