

Certificate of Analysis

Nancy McAtee
National Transportation Safety Board

Lab No. V0608005 (NATINM)
Report Date: June 28, 2017

Sample Description:

Lab Number V0608005 – Sample ID: Undetermined, Possibly Aeroshell 15W50

Dear Nancy:

Thank you for your confidence in SGS Herguth Laboratories, Inc. Please accept this report and attachments as our conclusion to the above numbered project/sample description.

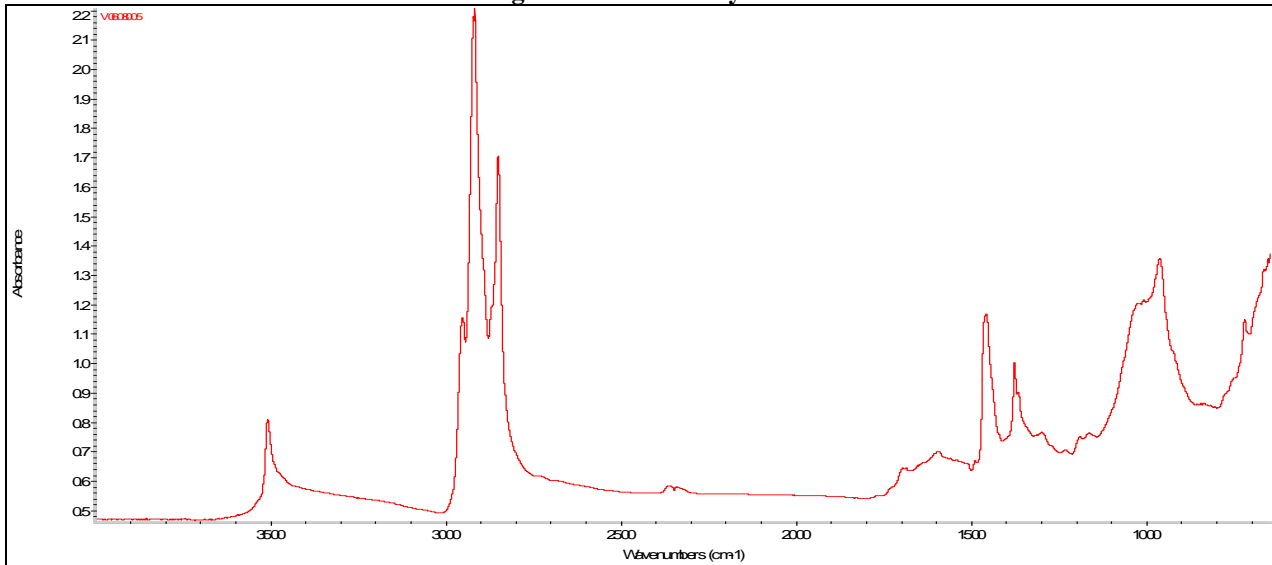
Conclusion: The sludge in the oil is a compound of lead and bromine. *Merck* lists lead bromide as a horn-like appearing substance when solidified. It doesn't suggest any uses. Infrared analysis suggests typical oil with phenolic components (Figure 1).

Background: A portion of the sludge was diluted in methylene chloride solvent and measured by infrared spectroscopy (Figure 1). A separate portion of the sludge was smeared on a carbon conductive substrate and directly examined by backscatter electron and x-ray microanalysis using Scanning Electron Microscopy (SEM). Figure 2 is a backscatter images with their associated x-ray spectra. Backscatter images show brightness relative to atomic number and density. The x-ray data was collected from the area marked in the image.

Respectfully submitted,

Guy Nadeau
Laboratory Technical Specialist

Figure 1. FTIR Analysis



Certificate of Analysis

Figure 2. Lead-Bromine Compound in Sludge

