

**DETERMINING ORGANIC CARBON ADSORPTION ON QUARTZ FIBER FILTERS BY
SAMPLE SPLITTING AND THERMAL/OPTICAL ANALYSIS**

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In order to distinguish the charring due to compounds volatilized during analysis from charring from adsorbed gaseous organic compounds, it is necessary to separate the upper portion of the filter where the particles are present from the lower portion. Microscopic examination of the filter cross section revealed that even in a heavily loaded filter, the particles penetrate only approximately one third into the filter. Thus if a sample filter is sliced into two halves of similar thickness, the top half should contain all the particles. For the filter slicing, a prototype device was fabricated from milling a channel 9.5 mm wide, 0.25 mm deep onto an approximately 15 cm square, 1.3 cm thick piece of aluminum plate. A filter disc, 9.5 mm in diameter was placed deposit side down onto the channel and held in place by the plate or glass. The portion of the filter that was above the aluminum plate was sliced off with a sharp razor. Since a typical Whatman QMA quartz filter is approximately 0.5 mm thick, the slicing resulted in an approximately even split, but could vary up to a 60:40 split according to the weights of the slices. Analysis of the back half of the filter shows that most of the low temperature fractions (evolving at <250 degrees C) are associated with adsorbed organic vapors.