

R. J. REYNOLDS TOBACCO COMPANY
RESEARCH DEPARTMENTBEST
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Subject Monthly Report July 1958

Date July 22, 1958

Job No. RP 207

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On the first of July the operation of the mass spectrometer was taken over from Mr. Lawrence. Since then the mass spectrometer has been used in preparing calibration samples, smoke analysis, and molecular weight determinations.

Samples containing known amounts of hydrogen sulfide, Carbonyl Sulfide, and sulfur dioxide were prepared on the mass spectrometer to be used by Dr. Elliott for calibration purposes.

Attempts were made to determine the molecular weight of these samples, two solids and an acid, for Dr. Schumacher. The weight of the acid was determined but work with the solids was unsuccessful.

Smoke condensates from treated cigarettes were analyzed semi-quantitatively for isoprene using the carbon dioxide content as an internal standard and the isoprene content compared to a untreated control cigarette. Cigarettes treated with magnesium nitrate, aluminum perchlorate, and aluminum acetate were analyzed in this manner. Two runs were necessary on the aluminum acetate treated cigarette because of an air leak in the smoking apparatus. The isoprene content of the smoke condensate from this cigarette was found to be 31.3% higher than in the control cigarette.

Modification of the sample introduction system is being studied. It is proposed to enclose the entire system in an oven in order to get more uniform

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heating and a higher temperature than is possible with the present arrangement. Also the addition of a mercury vapor type inlet system for the introduction of low boiling liquids is desirable

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