CHARGE NUMBER: 2501

PROJECT TITLE: Nuclear and Radiochemistry of Smoke

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^{14}C-Menthol Study[1-5]

A. Section data indicate a leveling off of the migration of the ^{14}C-menthol into the filters after approximately 20 weeks. Equilibrium has also apparently been reached for the spiked 2R1 cigarettes although the activity is not uniform down the rod. The filtered cigarettes had no activity applied to the filters but now show, after 25 weeks of sealed individual storage, filter activities of: Merit 85mm-73% of that activity applied to the rod; Va. Slim-65%; B&H Lights-66%; Merit Ultra Lights-77%. The section data will continue to be obtained for several more months to insure maximum migration.

Five total smoke distribution runs have been completed on the Merit 85mm ^{14}C-menthol spiked cigarettes. Average values for the five runs are shown. A slight butt build-up (2-4%) during smoking is indicated.

85mm Merit-^{14}C-Distribution

Sidestream Gas	10.0%
Mainstream Gas	0.3
Sidestream TPM	5.9
Mainstream TPM	2.8
Butt (filter + tipping)	81.0
Ash	0.1

GLRC data on the small mainstream gas phase contribution showed the bulk of the activity to be in the CO_2, ethene, propene and butene peaks. Of that activity found on the MSTPM pad, greater than 99.3% has been identified as ^{14}C-menthol. These smoke runs, carried out on a single port smoking machine, verify the small butt build-up evidenced in the total smoke recovery machine data.

B. Uniformly labelled ^{14}C-menthol containing cigarettes from a previous study were investigated for menthol delivery on a puff-by-puff basis. Evaluation