PROJECT NUMBER: 1503
PROJECT TITLE: Modified Smoking Materials
PROJECT LEADER: W. A. Nichols
PERIOD COVERED: February, 1990

I. Molten Menthol Application to Foil

A. **Objective**: Evaluate the use of a molten menthol applicator as a means of applying menthol to foil without the ethanol carrier.

B. **Results**: Observations during the coating of molten menthol have indicated that the menthol is not being absorbed into the paper face of the foil. Maximum reductions in foil linear speed are still insufficient to obtain adequate residence time for absorption before rewinding. Experimentation is being conducted to define the absorption rate.

Preliminary test results showed that when MMOF is embossed, significant contamination occurs due to the menthol crystals on the foil surface. To examine the contamination caused only by the paper face of the foil, the foil surface of the bobbin was cleaned and the bobbin will be tested on a GD packer.

C. **Plans**: Paper studies to investigate the rate of molten menthol absorption will be completed. Packer trials will be conducted when menthol absorption into the paper has been confirmed.

II. MGC Application

A. **Objective**: Assist New Products in producing cigarette samples containing the MGC menthol release compound by investigating the feasibility of applying MGC formulations to filler.

B. **Results**: Coating trials were conducted in the Semiworks rotary cylinder with 25-pound lots of filler. An ethanol solution with 10% MGC was applied at .5%, 1%, and 3% application levels. Cigarettes fabricated from the filler were produced and are being analyzed. While the spray application was successful, alcohol concentrations were not practical for conventional primary processing. Further trials were conducted at increased solution concentrations of 25% and 50% and application rates of 3%, 4.5%, and 6%. If the coated filler appears satisfactory, it will be processed into cigarettes. If the filler coated with the 50% solution processes satisfactorily in the cigarette maker, alcohol additions in the primary would be 3% to 6% which may be feasible in the primary processing operation.

A MK8 cigarette maker was modified for the injection of MGC into the tobacco on the suction belt in the chimney. Trials will begin next month.

C. **Plans**: Evaluate processibility of filler coated with increased solution concentrations. If results are positive, tests will be conducted in the Semiworks aftercut cylinder. Tests will also be conducted on the MK8 injection system.

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III. Sideseam Adhesive Metering System

A. **Objective**: Evaluate a sideseam adhesive metering system, developed by Applied Technology, for use in the Semiworks.

B. **Results**: The Thermal flowmeter was returned to the vendor for repair. A second unit is also being recalibrated by the vendor so that comparisons can be made between units.

Sample adhesives at a range of solids contents were submitted to Analytical Research for determination of specific heat. During analysis, a sensitivity to heating above 150° F was observed when an unknown compound volatilized in the sample. As the reference temperature used in the flowmeter heater is 150° F, previous calibration problems may be linked to this unknown compound. Testing is underway to identify the compound.

C. **Plans**: Analysis of the unknown compound will be completed. Possible solutions to the problem are being discussed with the adhesive vendor and flowmeter vendor.

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