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Bill  
to me  
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Dr. G. Smith

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PUC/JP/46M

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**SUBJECTIVE ASSESSMENT OF LOW SIDESTREAM PRODUCTS**

**Introduction**

Currently, we have been asked by our colleagues in Canada to subjectively assess the sidestream and ETS characteristics from four cigarettes, i.e. one control and three experimental products. One of these Canadian products has been wrapped in a paper coded 5-4 DEA 5.0 and this particular paper formulation has been AGP cleared for use. The other two papers are 5-4 DEA 7.0 and Ecusta TOD 04613; these two papers do not have full AGP clearance. The control product is made from conventional materials only.

The 5-4 DEA 7.0 sample has the same origin as the 5-4 DEA 5.0 but has ~7.0% sodium acetate added rather than ~5.0%. The Ecusta sample additionally contains Borax as well as MgO and sodium acetate. Details on the papers' mainstream deliveries and sidestream yields are listed below. I should point out that we have a great deal more information on 5-4 DEA 7.0 than on Ecusta TOD 04613 basically because this paper was developed by R&D whereas the Ecusta sample has simply been supplied.

**Subjective Assessment**

Subjective assessment of sidestream involves panellists inserting their heads into a 1-2 m<sup>3</sup> cubicle containing sidestream tobacco smoke. The panellists assess the sidestream for 30 seconds before scoring their responses. In terms of the experimental products, approximately 500 mg of tobacco and paper is burnt to generate the sidestream. Each panellist will assess the sidestream smoke from each experimental product twice only.

In terms of the ETS subjective assessment, here the smoke is generated by smokers, i.e. the assessment is of true ETS (sidestream + exhaled mainstream); the panellists enter the environment in which the smoke is generated and score the subjective attributes after 30 seconds and again after 5 minutes. Each panellist will assess the ETS characteristics of the experimental cigarettes once only. The number of smokers who will generate the ETS has yet to be finally determined and is linked to room size, etc.

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## Paper Characteristics

<u>Parameter</u>	<u>5-4 DEA 7.0</u>	<u>TOD 04613</u>
Supplier	Papeteries De Mauduit	Ecusta
Basis Weight (gsm)	37.4	45.0
% CaCO <sub>3</sub>	4.4	5.0
% MgO	10.3	24.1
Permeability (CU)	5	110
Opacity (EU)	73.0	Not known
Burn Additive, Type and % Level	Sodium Acetate 6.25%	Treated with Potassium and Acetate, level unknown. Also treated with Borax, level unknown.

## Cigarette Characteristics

The 5-4 DEA 7.0 paper sample has been used in R&D with the following cigarette construction details:

Tobacco Column Length	= 59 mm
Filter Length	= 25 mm
Filter Type	= Cellulose Acetate
Density	= 194 mg cc <sup>-1</sup>
Circumference	= 24.9 mm
Blend Chemistry % DWB	
TNA	= 1.83
Reducing Sugars	= 9.9
Total Sugars	= 10.5

Mainstream deliveries were as follows:

Puff Number	= 6.8
PMWNF	= 15.5 mg cig <sup>-1</sup>
TNA	= 0.81 mg cig
CO	= Out of range

Sidestream yields (all mg cig<sup>-1</sup>):

PMWNF	= 10.3
TNA	= 2.0
CO	= 33
CO <sub>2</sub>	= 305

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The Canadian samples have the following construction details:

	<u>TOD 04613</u>	<u>5-4 DEA 7.0</u>
Tobacco Column Length (mm)	64	64
Filler Length (mm)	20	20
Density (mg cc <sup>-1</sup> )	207	209
Circumference (mm)	24.9	24.8
Blend Chemistry % DWB		
TNA	2.37	2.35
Ventilation (%)	32	42
<b>Mainstream Deliveries:</b>		
Puff Number	7.9	10.4
PMWNF )	7.8	11.3
TNA ) mg cig <sup>-1</sup>	0.67	1.06
CO )	8.7	16.4
<b>Sidestream Yields (mg cig<sup>-1</sup>)</b>		
PMWNF	11.8	13.4
TNA	4.10	3.72

Further sidestream data should become available later with these samples.

Essentially, we are looking for limited clearance for the subjective assessment work to be undertaken on these samples.

If you require any further details, please do not hesitate to get in touch. A rapid response would be appreciated as the ETS subjective work is scheduled for the week of 18th September 1989.

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