

LABORATORY SERVICES

Analytical Report



B.A.T (U.K. and Export) Limited
RESEARCH & DEVELOPMENT CENTRE
SOUTHAMPTON ENGLAND

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No. AR. 89-02-015

Subject BRAND ANALYSIS - BAT (UK&E) ROUTINE

To Mr. A.R. Cousins,
Product Development Department,
WOKING

Circulation Mr. G.R. Wheatley, Woking
Production Department, Woking
Dr. T. Hirji, R&D Centre
Mr. A.A. Wicks, R&D Centre

File BA/BAT(UK&E) ROUTINE

Batch codes ACQYE, RBD, RLF, RKQ, RLL, RLK



Date 6TH FEBRUARY 1989

Signed *K. L. Brayshaw*
Mrs. K. L. BRAYSHAW
Section Leader Brand Analysis

NAMAS ACCREDITATION COVERS TPM, NICOTINE, WATER, PMWNF AND PUFF NUMBER ONLY

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N.B. The following checks have been made and have been confirmed:-

ACRBD - PD TOTAL, TOTAL WEIGHT, DENSITY AND
TOBACCO ANALYSIS.

400751107

PRODUCT DATA REPORT

VARIETY IDENTIFICATION	BRAND NAME EMBASSY	MARKET JERSEY	SOURCE UK+F COMP	FILTER YES	MENTHOL NO	LENGTH REGULAR
VARIETY INFORMATION	CUSTOMER UK+E WORKING	MANUFACTURER I.T.G.R	PACK SIZE 20	PACK HINGED LID	CIG PAPER UNPERF	PRODUCT CODE
	OVERTIP PRINTED CORK PERF	FILTER SINGLE	M-SECTION CELL ACCT	(MM) C-SECTION 18	(MM) T-SECTION	(MM) TYPE OF VENTILATION

RESULTS			SMOKE MEASUREMENTS									TOBACCO MEASUREMENTS				
BATCH OF CODE	DATE RECEIPT	SMKG M/C	BUTT LENGTH	PMNF MG CIG	TOTAL NIC MG CIG	PMNF /TOTAL NIC CIG	TPM MG CIG	WATER MG CIG	PUFF NO	CARBON MONOXIDE MG CIG	Z V/V	NIC DWB Z	RED SUGAR DWB Z	TOTAL SUGAR DWB Z	MOIST CONT. REC Z	MOIST CONT. AT SMKGZ
ACNKC	18 JUL 88	F300	U.K.									2.31	16.5	18.3	14.2	
ACNPS	1 AUG 88	F300	U.K.									2.24	16.2	19.1	13.7	
ACNVE	22 AUG 88	F300	U.K.	12.9	1.09	12	17.2	3.2	8.2	14.5	4.5	2.16	14.0	16.1	12.5	13.9
ACOCU	21 SEP 88	F300	U.K.									2.20	16.4	17.8	14.2	
ACOXL	16 NOV 88	F300	U.K.	12.4	1.10	11	16.3	2.8	8.5	13.4	4.0	2.21	14.4	16.4	13.2	13.3

CURRENT BATCH RESULTS

ACQYE	21 NOV 88	F300	U.K.									2.25	14.6	16.2	13.3	
95% CL ON CURRENT RESULTS (+/-)				0	0		0	0	0							
NUMBER OF OBSERVATIONS																

RESULTS (CONT)			PHYSICAL MEASUREMENTS														
BATCH CODE	PACKET CODE	TIP VENTILATION Z	STD DEV.	FILL DENSITY 913.5%MC MG/CC	CIG PAPER PERM (CU)	PD TOTAL MM MG	PD ROD MM MG	PD FILTR MM MG	LGTH TOTAL MM	LGTH ROD MM	LGTH FILTR MM	LGTH OTIP MM	CIRC. MM	WT TOTAL G	WT ROD G	WT FILTR NETT G	WT FILTR TIP G
ACNKC	40554	9.2	1.0	265	39	130	44	89.8	71	53	18	21	24.42	0.87	0.72	0.120	0.152
ACNPS	4055	9.6	0.7	264	44	125	38	91.8	71	53	18	21	24.91	0.88	0.73	0.114	0.149
ACNVE	40556	8.4	0.9	274	41	132	51	93.8	71	53	18	21	24.78	0.87	0.73	0.114	0.147
ACOCU	40657	10.4	0.7	273	42	122	39	89.8	71	53	18	21	24.87	0.89	0.74	0.117	0.149
ACOXL	40562	10.1	1.0	275	33	131	39	93.8	71	53	18	21	24.36	0.89	0.74	0.116	0.150

CURRENT BATCH RESULTS

ACQYE	40568	11.1	0.9	273	37	124	46	90.8	71	53	18	21	24.34	0.88	0.73	0.115	0.146
95% CL ON CURRENT RESULTS (+/-)						5.1	7.4	3.2									
NUMBER OF OBSERVATIONS						20	10	10									

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PRODUCT DATA REPORT

VARIETY IDENTIFICATION	BRAND NAME	MARKET	SOURCE	FILTER	MENTHOL	LENGTH
	JOHN PLAYER SUPERKINGS	INT DUTY FREE	UK+E COMP	YES	NO	SUPER

VARIETY INFORMATION	CUSTOMER	MANUFACTURER	PACK SIZE	PACK	CIG PAPER	PRODUCT CODE
	UK+E WORKING	I.T.GR	20	HINGED LID	UNPERF	
	OVERTIP	FILTER	M-SECTION	(MM) C-SECTION	(MM) T-SECTION	(MM) TYPE OF VENTILATION
	PRINTED CORK PEAF	SINGLE CELL ACET	25			

RESULTS	SMOKE MEASUREMENTS										TOBACCO MEASUREMENTS				
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BATCH CODE	DATE OF RECEIPT	SMKG M/C	BUTT LENGTH	PMWNF MG CIG	TOTAL NIC MG CIG	PMWNF /TOTAL NIC	TPM MG CIG	WATER MG CIG	PUFF NO	CARBON MONOXIDE MG X CIG V/V	NIC DWB X	RED SUGAR DWB X	TOTAL SUGAR DWB X	MOIST CONT. REC X	MOIST CONT. AT SMOX
ACMYC	14 JUN 88	F300	U.K.												
ACNKS	18 JUL 88	F300	U.K.	15.7	1.50	10	18.9	1.7	11.1	15.7	3.5	2.09	14.6	16.6	12.0
ACNTZ	16 AUG 88	F300	U.K.									2.13	15.5	17.1	12.3
ACDEZ	27 SEP 88	F300	U.K.									2.09	14.9	16.8	12.2
ACDEZ	27 SEP 88	F300	U.K.									2.10	14.7	16.5	12.0
ACDQJ	25 OCT 88	F300	U.K.	15.8	1.51	10	19.1	1.8	11.1	15.9	3.4	2.18	14.9	16.3	12.2

CURRENT BATCH RESULTS

ACRJD	28 NOV 88	F300	U.K.									2.04	15.2	16.9	11.2
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95% CL ON CURRENT RESULTS (+/-)
NUMBER OF OBSERVATIONS

0 0 0 0 0

RESULTS (CONT)	PHYSICAL MEASUREMENTS														
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BATCH CODE	PACKET CODE	TIP VENTILATION %	STD DEV.	FILL DENSITY @13.52MC MG/CC	CIG PAPER PERM (CU)	PD TOTAL MM HG	PD ROD MM HG	PD FILTR MM HG	LGTH TOTAL MM	LGTH ROD MM	LGTH FILTR MM	LGTH DTIP MM	CIRC MM	WT TOTAL G	WT ROD G	WT FILTR NEIT G	WT FILTR TIP G
ACMYC	443	16.2	2.3	277	37	116	56	72 8	100	75	25	29	24.74	1.22	1.02	0.149	0.194
ACNKS	442	16.0	2.3	273	43	117	61	73 8	100	75	25	30	24.75	1.21	1.02	0.148	0.198
ACNTZ		14.4	1.7	271	39	120	56	75 8	100	76	24	29	24.76	1.22	1.02	0.152	0.194
ACDEZ	443	15.9	2.1	273	43	116	60	73 8	100	75	25	29	24.76	1.21	1.01	0.150	0.195
ACDQJ	443	16.0	1.7	272	41	117	59	72 8	100	75	25	29	24.74	1.21	1.01	0.150	0.197

CURRENT BATCH RESULTS

ACRJD	151	19.9	2.2	288	44	130	64	96 8	100	75	25	29	24.67	1.24	1.03	0.150	0.194
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95% CL ON CURRENT RESULTS (+/-)
NUMBER OF OBSERVATIONS

3.2 7.5 2.7
20 10 10

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BAT(UKEE) R&DC - LABORATORY SERVICES DEPARTMENT

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PRODUCT DATA REPORT

VARIETY IDENTIFICATION :	BRAND NAME	MARKET	SOURCE	FILTER	MENTHOL	LENGTH
	FINE	BURKINA FASO	UK+E COMP	YES	NO	KING
VARIETY INFORMATION :	CUSTOMER	MANUFACTURER	PACK SIZE	PACK	CIG PAPER	PRODUCT CODE
	UK+E WORKING	SEITA	20	HINGED LID	UNPERF	
	OVERTIP	FILTER	M-SECTION	(MM) C-SECTION	(MM) T-SECTION	(MM) TYPE OF VENTILATION
	PRINTED CORK UNPERF	SINGLE	CELL ACET	20		

RESULTS : SMOKE MEASUREMENTS TOBACCO MEASUREMENTS

BATCH OF CODE	DATE RECEIPT	SMKG M/C	BUTT LENGTH	PM+MF MG CIG	TOTAL NIC MG CIG	PM+MF /TOTAL NIC	TPH MG CIG	WATER MG CIG	PUFF NO	CARBON MONOXIDE MG CIG	% V/V	NIC DWB %	RED SUGAR DWB %	TOTAL SUGAR DWB %	MOIST CONT. REC %	MOIST CONT. AT SMKGZ
ACKYT	18 JAN 88	F300	U.K.	15.9	1.20	13	20.0	3.0	9.0	18.9	5.1	1.58	15.5	17.3	13.4	12.3
ACKLY	18 FEB 88	F300	U.K.									1.50	14.0	16.0	9.0	
ACLSJ	10 MAR 88	F300	U.K.									1.53	14.0	15.8	9.7	
ACMCA	7 APR 88	F300	U.K.	15.8	1.13	14	19.8	2.9	9.3	19.4	5.1	1.54	16.3	18.2	13.2	13.6
ACRHM	19 DEC 88	F300	U.K.	16.0	1.21	13	20.5	3.3	9.8	18.2	4.6	1.58	17.3	19.2	13.3	13.3

CURRENT BATCH RESULTS

ACRLF	6 JAN 89	F300	U.K.	16.0	1.14	14	19.8	2.7	9.4	18.3	4.7	1.57	17.2	19.3	12.1	13.2
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95% CL ON CURRENT RESULTS (+/-)
 NUMBER OF OBSERVATIONS

0.8 0.04 1.6 0.8 0.4
 5 5 5 5 5

RESULTS (CONT) : PHYSICAL MEASUREMENTS

BATCH CODE	PACKET CODE	TIP VENTILATION % STD DEV.	FILL DENSITY 213.52 MC MG/CC	CIG PAPER PERM (CU)	PD TOTAL MM MG	PD ROD MM MG	PD FILTER MM MG	LGTH TOTAL MM	LGTH ROD MM	LGTH FILTER MM	LGTH QTIP MM	CIRC. MM	WT TOTAL G	WT ROD G	WT FILTER NETT G	WT FILTER TIP G
ACKYT	NA4		291	38	121	59	63	84	64	20	24	24.93	1.10	0.95	0.117	0.157
ACKLY	NA4		293	43	110	47	62	84	64	20	24	25.01	1.04	0.88	0.116	0.153
ACLSJ	NA4		296	42	113	47	63	84	64	20	24	24.93	1.05	0.90	0.116	0.156
ACMCA			292	38	128	59	68	84	64	20	24	24.85	1.10	0.94	0.120	0.160
ACRHM	P34		290	41	124	58	65	84	64	20	24	24.77	1.09	0.93	0.125	0.159

CURRENT BATCH RESULTS

ACRLF	NA4		290	43	121	58	64	84	64	20	24	24.88	1.04	0.93	0.121	0.160
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95% CL ON CURRENT RESULTS (+/-)
 NUMBER OF OBSERVATIONS

2.3 3.0 1.2
 20 10 10

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BAT(UK&E) RECD - LABORATORY SERVICES DEPARTMENT

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PRODUCT DATA REPORT

VARIETY IDENTIFICATION :	BRAND NAME	MARKET	SOURCE	FILTER	MENTHOL	LENGTH
	EMBASSY	JERSEY	UK+E COMP	YES	NO	REGULAR
VARIETY INFORMATION :	CUSTOMER	MANUFACTURER	PACK SIZE	PACK	CIG PAPER	PRODUCT CODE
	UK+E WORKING	I.T.G.R	20	HINGED LID	UNPERF	
	OVERTIP	FILTER	M-SECTION	(MM) C-SECTION	(MM) T-SECTION	(MM) TYPE OF VENTILATION
	PRINTED CORK PERF	SINGLE	CELL ACET	18		

RESULTS : SMOKE MEASUREMENTS TOBACCO MEASUREMENTS

BATCH OF CODE	DATE RECEIPT	SMKG M/C	BUTT LENGTH	PMNMF MG CIG	TOTAL NIC MG CIG	PMNMF /TOTAL MG CIG	TPM MG CIG	WATER NG CIG	PUFF NO	CARBON MONOXIDE MG Z CIG	NIC DWB Z	RED SUGAR DWB Z	TOTAL SUGAR DWB Z	MOIST CONT. REC Z	MOIST CONT. AT SHKGZ
ACNPS	1 AUG 88	F300	U.K.								2.24	16.2	19.1	13.7	
ACNVE	22 AUG 88	F300	U.K.	12.9	1.09	12	17.2	3.2	8.2	14.5	4.5	2.16	14.0	16.1	12.5
ACOCU	21 SEP 88	F300	U.K.								2.20	16.4	17.8	14.2	
ACQXL	16 NOV 88	F300	U.K.	12.4	1.10	11	16.3	2.8	8.5	13.4	4.0	2.21	14.4	16.4	13.2
ACQYE	21 NOV 88	F300	U.K.								2.25	14.6	16.2	13.3	

CURRENT BATCH RESULTS

ACRKO 6 JAN 89 F300 U.K. 2.23 15.5 17.0 13.9

95% CL ON CURRENT RESULTS (+/-)
NUMBER OF OBSERVATIONS

0 0 0 0 0

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RESULTS (CONT) : PHYSICAL MEASUREMENTS

BATCH CODE	PACKET CODE	TIP VENTILATION %	STD DEV.	FILL DENSITY 213.5 MC NG/CC	CIG PAPER PEAK (CU)	PD TOTAL MM WG	PD ROD MM WG	PD FILTR MM WG	LGTH TOTAL MM	LGTH ROD MM	LGTH FILTR MM	LGTH OTIP MM	CIRC MM	WT TOTAL G	WT ROD G	WT FILTR NETT G	WT FILTR TIP G
ACNPS	4055	9.6	0.7	269	44	125	38	91.8	71	53	18	21	24.91	0.88	0.73	0.114	0.149
ACNVE	40556	8.6	0.9	274	41	132	51	93.8	71	53	18	21	24.78	0.87	0.73	0.114	0.147
ACOCU	40657	10.4	0.7	273	42	122	39	89.8	71	53	18	21	24.87	0.89	0.74	0.117	0.149
ACQXL	40562	10.1	1.0	275	38	131	39	93.8	71	53	18	21	24.86	0.89	0.74	0.116	0.150
ACQYE	40568	11.1	0.9	273	37	124	46	90.0	71	53	18	21	24.84	0.88	0.73	0.115	0.146

CURRENT BATCH RESULTS

ACQYE 40562 9.7 0.9 270 40 124 41 90.0 71 53 18 21 24.85 0.88 0.73 0.116 0.152

95% CL ON CURRENT RESULTS (+/-)
NUMBER OF OBSERVATIONS4.2 2.8 5.0
20 10 10

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PRODUCT DATA REPORT

VARIETY IDENTIFICATION	BRAND NAME	MARKET	SOURCE	FILTER	NENTHOL	LENGTH
3 + H SPECIAL		GREECE	UK+E OWN	YES	NO	KING
VARIETY INFORMATION	CUSTOMER	MANUFACTURER	PACK SIZE	PACK	CIG PAPER	PRODUCT CODE
	UK+E WORKING	KERANIS	20	HINGED LTD	UNPERF	
	OVERTIP	FILTER	M-SECTION	(MM) C-SECTION	(MM) T-SECTION	(MM) TYPE OF VENTILATION
	PRINTED CORK UNPERF	SINGLE	CELL ACET	20		

RESULTS		SMOKE MEASUREMENTS										TOBACCO MEASUREMENTS				
BATCH OF CODE	DATE RECEIPT	SHKG M/C	BUTT LENGTH	PMWNF MG CIG	TOTAL NIC MG CIG	PMWNF /TOTAL NIC CIG	TPM MG CIG	WATER MG CIG	PUFF NO	CARBON MONOXIDE MG CIG	Z V/V	NIC DWB %	RED SUGAR DWB %	TOTAL SUGAR DWB %	MOIST CONT. REC %	MOIST CONT. AT SHKGZ
ACNQI	2 AUG 88	F300	U.K.	17.6	1.56	11	21.5	2.4	10.7	16.2	3.7	2.10	14.7	15.6	10.4	13.0
ACNMG	25 AUG 88	F300	U.K.									1.88	14.7	16.5	12.0	
ACQMC	4 OCT 88	F300	U.K.									2.09	14.1	15.3	12.9	
ACQHD	4 OCT 88	F300	U.K.	17.4	1.69	10	21.9	2.8	11.8	16.9	3.6	2.06	14.7	15.2	12.6	12.4
ACQRI	25 OCT 88	F300	U.K.	17.6	1.58	11	22.1	2.9	10.5	17.3	4.0	1.94	13.5	14.7	12.8	12.2

CURRENT BATCH RESULTS

ACRLL 6 JAN 89 F300 U.K. 2.10 14.7 16.9 13.0

95% CL ON CURRENT RESULTS (+/-)
NUMBER OF OBSERVATIONS

0 0 0 0 0

RESULTS (CONT) 1			PHYSICAL MEASUREMENTS													
BATCH CODE	PACKET CODE	TIP VENTILATION	FILL DENSITY	CIG PAPER	PD	PD	PD	LGTH	LGTH	LGTH	LGTH	CIRC	WT	WT	WT	WT
		% STD DEV.	213.5ZMC MG/CC	PERM (CU)	TOTAL MM WG	ROD MM WG	FILTR MM WG	TOTAL MM	ROD MM	FILTR MM	OTIP MM		TOTAL G	ROD G	FILTK NETT G	FILTR TIP G
ACNQI	18071		286	80	110	48	62	84	64	20	24	24.95	1.08	0.91	0.135	0.174
ACNMG	68080		295	79	109	49	63	84	64	20	24	24.90	1.11	0.94	0.130	0.170
ACQMC	68091		304	80	115	57	62	84	64	20	24	25.05	1.16	0.99	0.134	0.170
ACQHD	68091		301	82	114	52	66	84	64	20	24	25.07	1.16	0.99	0.140	0.172
ACQRI	19100		292	77	114	49	67	84	64	20	24	24.85	1.12	0.95	0.141	0.176

CURRENT BATCH RESULTS

ACRLL 19122 296 81 115 49 65 84 64 20 24 25.01 1.14 0.97 0.134 0.170

95% CL ON CURRENT RESULTS (+/-)
NUMBER OF OBSERVATIONS

1.7 3.6 3.1
20 10 10

400751112

PRODUCT DATA REPORT

VARIETY IDENTIFICATION :	SKAND NAME RUTHMANS	MARKET GREECE	SOURCE UK+E COMP	FILTER YES =	LENGTH NO	LENGTH RING
VARIETY INFORMATION :	CUSTOMER UK+E SOKING	MANUFACTURER GEORGADIS	PACK SIZE 20	PACK HINGED LID	CIG PAPER UNPERF	PRODUCT CODE
CCCC	OVERTIP PRINTED CORK UNPERF	FILTER SINGLE	N-SECTION CELL ACET	(MM) C-SECTION 20	(MM) T-SECTION	(MM) TYPE OF VENTILATION

RESULTS			SMOKE MEASUREMENTS										TOBACCO MEASUREMENTS				
BATCH CODE	DATE OF RECEIPT	SMKG M/C	BUTT LENGTH	PMANF MG CIG	TOTAL NIC MG CIG	PMANF /TOTAL NIC	TPM MG CIG	WATER MG CIG	PUFF NO	CARBON MONOXIDE MG CIG	% V/V	NIC DMB Z	RED SUGAR DMB Z	TOTAL SUGAR UMB Z	MOIST CONT. REC Z	MOIST CONT. AT SMOGZ	
ACNEX	27 JUN 88	F300	U.K.									1.75	12.7	13.7	11.9		
ACNQH	2 AUG 88	F300	U.K.	15.6	1.20	13	19.2	2.3	9.6	15.0	3.9	1.70	13.5	14.0	11.5	13.6	
ACNWP	25 AUG 88	F300	U.K.									1.54	12.3	13.1	11.3		
ACQHB	4 OCT 88	F300	U.K.	17.8	1.32	13	22.2	3.1	10.3	16.5	3.9	2.03	14.6	15.7	12.1	12.8	
ACRHJ	19 DEC 88	F300	U.K.	17.5	1.46	12	21.7	2.7	10.1	16.5	3.9	1.90	14.9	16.2	12.3	13.2	

CURRENT BATCH RESULTS

CCCC	ACRLK	6 JAN 89	F300	U.K.								1.98	13.6	15.8	12.1	
95% CL ON CURRENT RESULTS (+/-)																
NUMBER OF OBSERVATIONS				0	0		0	0	0							

RESULTS (CONT) :			PHYSICAL MEASUREMENTS													
BATCH CODE	PACKET CODE	TIP VENTILATION % STD DEV.	FILL DENSITY 213.5XMC MG/CC	CIG PAPER PERM (CU)	PD TOTAL MM HG	PD ROD MM HG	PD FILTR MM HG	LGTH TOTAL MM	LGTH ROD MM	LGTH FILTR MM	LGTH DTIP MM	CIRL MM	WT TOTAL G	WT ROD G	WT FILTR NETT G	WT FILTR TIP G
ACNEX	22601		278	75	115	47	68	84	64	20	24	24.91	1.06	0.89	0.128	0.168
ACNQH	251GR		291	81	112	48	63	84	64	20	24	24.72	1.06	0.89	0.130	0.170
ACNWP	301GY		267	71	111	46	67	84	64	20	24	24.45	1.02	0.85	0.129	0.170
ACQHB	361GG		277	72	108	45	65	84	64	20	24	24.90	1.06	0.89	0.127	0.168
ACRHJ	462GG		271	65	101	41	65	84	64	20	24	24.75	1.03	0.87	0.126	0.166

CURRENT BATCH RESULTS

CCCC	ACRLK	462GG	280	74	104	41	53	83	63	20	24	24.70	1.04	0.83	0.126	0.164
95% CL ON CURRENT RESULTS (+/-)					5.3	5.3	4.9									
NUMBER OF OBSERVATIONS					20	10	10									

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