

# Electronic Cigarette Trade Association

1295 Mosley St. Unit 6  
Wasaga Beach Ont, L9Z 2C7

eCigarettes & eLiquid Samples

Nicotine Yield Study

Analytical Report  
(0114-03)

## *GC/FID Analysis*

Nicotine  
Propylene glycol  
Vegetable glycerin



**Enthalpy Analytical, Inc.**

Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / [www.enthalpy.com](http://www.enthalpy.com)  
800-1 Capitola Drive Durham, NC 27713-4385

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized

This analytical report was prepared in Portable Document Format (.PDF) and contains 15 pages.

Report Issued: 01/27/2014



# Summary of Results



# eCigarette ID Key

<i>EA ID</i>	<i>Product ID</i>	<i>Client Code</i>
0114-03-01	Mac Maurier 36mg/mL	ECTA-0001
0114-03-02	Mac Maurier 36mg/mL	ECTA-0002
0114-03-03	Mac Maurier 36mg/mL	ECTA-0003
0114-03-A	Joytech, eRoll (2 ea.)	ECTA-HW001
0114-03-B	Kangertech Evod (2 ea.)	ECTA-HW002
0114-03-C1	Dual Coil, iClear 30	ECTA-HW003
0114-03-C2	Dual Coil, iClear 30S	ECTA-HW003



Report for: ECTA  
 Client Project: Nicotine Yield Test

Project Code: 0114-03  
 Project Start Date: 12/30/2013  
 Analysis Method: ENT184

Device ID	Puff Count Intervals	Cond #	Wt (mg)	Catch Weights (mg)			
			Pad	Glycerin	Nicotine	Propylene Glycol	Total
A1	001 - 025	4	114.3	36.0	3.22	53.6	92.8
A1	026 - 050	4	14.9	4.94	0.450	7.49	12.9
A1	051 - 075	4	29.4	8.51	0.740	12.3	21.5
A1	076 - 100	4	136.1	42.5	3.56	59.0	105
A1	101 - 125	4	135.9	41.3	3.39	62.5	107
A1	126 - 150	4	104.4	31.3	2.77	47.2	81.3
A1	151 - 175	4	45.6	14.2	1.29	20.6	36.1
A1	176 - 200	4	118.9	35.8	3.19	53.2	92.2
		<b>Sum</b>	<b>699.5</b>	<b>215</b>	<b>18.6</b>	<b>316</b>	<b>549</b>
2A1	001 - 025	4	134.9	40.2	3.58	59.8	104
2A1	026 - 050	4	100.5	28.2	2.81	46.7	77.8
2A1	051 - 075	4	29.0	5.86	0.890	14.7	21.4
2A1	076 - 100	4	109.8	31.2	3.05	49.6	83.8
2A1	101 - 125	4	-0.7	0.00	0.00	1.07	1.07
2A1	126 - 150	4	82.7	23.9	2.15	36.1	62.2
2A1	151 - 175	4	120.6	36.2	3.24	53.3	92.7
2A1	176 - 200	4	134.1	42.3	3.58	58.6	104
		<b>Sum</b>	<b>710.9</b>	<b>208</b>	<b>19.3</b>	<b>320</b>	<b>547</b>



Report for: ECTA  
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Project Code: 0114-03  
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Device ID	Puff Count Intervals	Cond #	Wt (mg)	Catch Weights (mg)			
			Pad	Glycerin	Nicotine	Propylene Glycol	Total
B1	001 - 025	4	174.9	54.2	5.05	79.7	139
B1	026 - 050	4	185.3	57.3	5.34	85.2	148
B1	051 - 075	4	172.1	52.6	5.03	80.8	139
B1	076 - 100	4	158.2	47.0	4.60	75.5	127
B1	101 - 125	4	170.2	47.7	4.55	72.8	125
B1	126 - 150	4	166.9	47.6	4.70	75.1	127
B1	151 - 175	4	162.3	49.0	4.78	77.2	131
B1	176 - 200	4	149.2	43.2	4.26	69.8	117
		<b>Sum</b>	<b>1339.1</b>	<b>399</b>	<b>38.3</b>	<b>616</b>	<b>1,053</b>
2B1	001 - 025	4	164.0	51.9	4.86	77.2	134
2B1	026 - 050	4	173.9	51.7	5.11	83.7	141
2B1	051 - 075	4	138.4	41.6	4.01	64.9	110
2B1	076 - 100	4	174.9	52.2	5.10	81.8	139
2B1	101 - 125	4	166.6	48.5	4.79	78.3	132
2B1	126 - 150	4	107.1	29.2	3.01	49.5	81.6
2B1	151 - 175	4	154.0	44.7	4.45	73.5	123
2B1	176 - 200	4	127.6	34.2	3.71	63.1	101
		<b>Sum</b>	<b>1206.5</b>	<b>354</b>	<b>35.0</b>	<b>572</b>	<b>961</b>



Report for: ECTA  
 Client Project: Nicotine Yield Test

Project Code: 0114-03  
 Project Start Date: 12/30/2013  
 Analysis Method: ENT184

			Wt (mg)	Catch Weights (mg)			
Device ID	Puff Count Intervals	Cond #	Pad	Glycerin	Nicotine	Propylene Glycol	Total
C2	001 - 025	4	127.0	38.7	3.44	57.1	99.3
C2	026 - 050	4	126.4	39.8	3.67	59.9	103
C2	051 - 075	4	122.0	37.2	3.44	56.1	96.8
C2	076 - 100	4	102.3	26.5	3.05	50.3	79.8
C2	101 - 125	4	117.3	35.3	3.33	54.5	93.1
C2	126 - 150	4	111.7	32.9	3.21	51.8	87.9
C2	151 - 175	4	96.9	25.5	2.95	47.4	75.9
C2	176 - 200	4	102.8	26.9	2.99	48.3	78.1
		<b>Sum</b>	<b>906.4</b>	<b>263</b>	<b>26.1</b>	<b>425</b>	<b>714</b>
2C2	001 - 025	4	91.4	22.8	2.65	44.4	69.8
2C2	026 - 050	4	137.4	44.0	3.82	62.1	110
2C2	051 - 075	4	125.3	36.4	3.46	55.8	95.6
2C2	076 - 100	4	155.6	40.9	3.98	65.0	110
2C2	101 - 125	4	136.0	41.1	3.85	62.3	107
2C2	126 - 150	4	116.9	18.2	2.64	44.7	65.5
2C2	151 - 175	4	130.9	36.6	3.55	58.5	98.6
2C2	176 - 200	4	116.7	19.2	2.80	46.9	68.9
		<b>Sum</b>	<b>1010.2</b>	<b>259</b>	<b>26.8</b>	<b>440</b>	<b>726</b>

Note: Glycerin and propylene glycol test results are not covered by Enthalpy's current A2LA accreditation.

Report for: ECTA  
 Client Project: Nicotine Yield Test

Project Code: 0114-03  
 Project Start Date: 2/30/2013  
 Analysis Method: ENT184

Cond. #	Puff Vol (mL)	Duration (sec)	Wave Type
4	55	4	Square

Note: Batteries charged before use.

Device ID	Compound(s)	Cond #	Pad Weights (mg)										Total Puffs	Comments
			Total Wt Loss (mg)	Puff Block 1	Puff Block 2	Puff Block 3	Puff Block 4	Puff Block 5	Puff Block 6	Puff Block 7	Puff Block 8			
A1	N	4	699.5	114.3	14.9	29.4	136.1	135.9	104.4	45.6	118.9	200	a1-051:battery flashed about puff 9; a1-076: changed batteries; a1-151:started flashing 13 puffs.  a1-101: device did not pull any vapor, changed atomizers.	
2A1	N	4	710.9	134.9	100.5	29.0	109.8	-0.7	82.7	120.6	134.1	200		
B1	N	4	1339.1	174.9	185.3	172.1	158.2	170.2	166.9	162.3	149.2	200	none	
2B1	N	4	1206.5	164.0	173.9	138.4	174.9	166.6	107.1	154.0	127.6	200	none	
C2	N	4	906.4	127.0	126.4	122.0	102.3	117.3	111.7	96.9	102.8	200	none	
2C2	N	4	1010.2	91.4	137.4	125.3	155.6	136.0	116.9	130.9	116.7	200	none	





Certificate No. 3198.01

Report for: ECTA  
 Client Project: na

Project Code: 0114-03  
 Project Start Date: 12/30/2013  
 Analysis Method: ENT184

**Dilution  
 Factor**

Lowest Standard Value x DF, ug/mL	100	5.14
Minimum Detection Limit x DF, ug/mL	100	1.00

Enthalpy Code	Client Code	DF	Nicotine (mg/mL)
0114-03-01-01	Mac Maurier 36mg/mL	100	35.1
0114-03-01-02	ECTA-0001	100	35.0
0114-03-01-03		100	35.0
			-
	<b>Average</b>		<b>35.0</b>
	<b>SD</b>		<b>0.0898</b>
	<b>%RSD</b>		<b>0.3</b>

Report for: ECTA  
 Client Project: na

Project Code: 0114-03  
 Project Start Date: 12/30/2013  
 Analysis Method: ENT184

**Dilution  
 Factor**

Lowest Standard Value x DF, ug/mL	100	25.5
Minimum Detection Limit x DF, ug/mL	100	2.55

Enthalpy Code	Client Code	DF	Propylene glycol (mg/mL)
0114-03-03-01	Mac Maurier 36mg/mL	100	559
0114-03-03-02	ECTA-0003	100	559
0114-03-03-03		100	558
			-
	<b>Average</b>		<b>559</b>
	<b>SD</b>		<b>0.51</b>
	<b>%RSD</b>		<b>0.1</b>

Note: Glycerin and propylene glycol test results are not covered by Enthalpy's current A2LA accreditation.

Report for: ECTA  
 Client Project: na

Project Code: 0114-03  
 Project Start Date: 12/30/2013  
 Analysis Method: ENT184

**Dilution  
 Factor**

Lowest Standard Value x DF, ug/mL	100	33.1
Minimum Detection Limit x DF, ug/mL	100	3.31

<b>Enthalpy Code</b>	<b>Client Code</b>	<b>DF</b>	<b>Glycerin (mg/mL)</b>
0114-03-03-01	Mac Maurier 36mg/mL	100	328
0114-03-03-02	ECTA-0003	100	326
0114-03-03-03		100	326
			-
	<b>Average</b>		<b>327</b>
	<b>SD</b>		<b>1.01</b>
	<b>%RSD</b>		<b>0.3</b>

Note: Glycerin and propylene glycol test results are not covered by Enthalpy's current A2LA accreditation.

# Sample Receipt Record





# Chain of Custody Record

Page 1 of 1

**Special Handling:**

- Standard Turn Around Time (10 business days)
- Rush Turn Around Time – Date Needed \_\_\_\_\_
- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- All Bag/Can Samples Disposed of 1 Month from Receipt.
- All Other Samples Disposed of 4 Months from Receipt.

Client Name: Flavour Crafters  
 Project Manager: Brian Tyler  
 Report To: Joel Verburg

Project Number: \_\_\_\_\_  
 Site Name: Head Offices  
 Location: London, ON N5W 3P4

PO#: \_\_\_\_\_  
 Telephone#: 2266265660  
 Email: sales@flavourcrafters.biz

For spiked or duplicate samples: please provide sample volumes for recovery calculations.  
 For Particulates: please provide tare weights and/or condensed water volumes.

Special Instructions:

A=Air 1=H2SO4 2=NaOH 3=\_\_\_\_\_ 4=\_\_\_\_\_  
 X=XAD C=Charcoal SG=Silica Gel  
 G=Grab C=Composite Q=Quality Control

Sample ID	Date	Time	Sample Volume	Type	Matrix	Sample Containers							Analyses:					Notes:	
						# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes	# Other							
ECTA-0001	11/22/2013		10mL					2											Mac Maurier 36mg/mL
ECTA-0002	11/22/2013		10mL					2											Mac Maurier 36mg/mL
ECTA-0003	11/22/2013		10mL					2											Mac Maurier 36mg/mL

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Condition Upon Receipt:
Joel Verburg	Nov. 22, 2013	<i>[Signature]</i>	12/27/13	1600	<input type="checkbox"/> Iced <input checked="" type="checkbox"/> Ambient <input type="checkbox"/> °C _____
		<i>[Signature]</i>	12/30/13	1155	<input type="checkbox"/> Iced <input type="checkbox"/> Ambient <input type="checkbox"/> °C _____
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient <input type="checkbox"/> °C _____

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# Chain of Custody Record

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**Special Handling:**

- Standard Turn Around Time (10 business days)
- Rush Turn Around Time – Date Needed \_\_\_\_\_
- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- All Bag/Can Samples Disposed of 1 Month from Receipt.
- All Other Samples Disposed of 4 Months from Receipt.

Client Name: <u>ECTA of Canada</u>	Project Number: _____	PO#: _____	For spiked or duplicate samples: please provide sample volumes for recovery calculations. For Particulates: please provide tare weights and/or condensed water volumes.
Project Manager: <u>Bryan</u>	Site Name: _____	Telephone#: <u>1-888-574-7043</u>	
Report To: _____	Location: _____	Email: <u>Daniel@europe.ca</u>	

Special Instructions:						Sample Containers							Analyses:							Notes:
Sample ID	Date	Time	Sample Volume	Type	Matrix	# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes	# Other								
A=Air 1=H2SO4 2=NaOH 3=_____ 4=_____ X=XAD C=Charcoal SG=Silica Gel G=Grab C=Composite Q=Quality Control																				
<u>ECTA-HW001</u>																			<u>Jaytech eRoll</u>	
<u>ECTA-HW002</u>																			<u>Komertech Evod</u>	
<u>ECTA-HW003</u>																			<u>Eco-L 2 Dual coil i clear 30</u>	
																			<u>(C1 is pink</u>	
																			<u>C2 is clear</u>	
																			<u>&amp; 30\$)</u>	

BPT  
12/30/13  
i clear 30

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Condition Upon Receipt:
<u>[Signature]</u>	<u>12/21/13</u>	<u>[Signature]</u>	<u>12/21/13</u>	<u>1600</u>	<input type="checkbox"/> Iced <input checked="" type="checkbox"/> Ambient <input type="checkbox"/> °C _____
		<u>Emily Stewart</u>	<u>12/30/13</u>	<u>1155</u>	<input type="checkbox"/> Iced <input type="checkbox"/> Ambient <input type="checkbox"/> °C _____
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient <input type="checkbox"/> °C _____

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Of This Report.**

