

**LABORATORY
NOTEBOOK**

Nº 1044

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Argentum Pharmaceuticals LLC v. Cipla Ltd.
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Form 590

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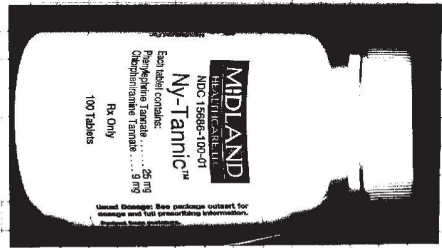
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RECEIVED NY-TANNIC™ TABLETS FROM B. TOMAS, SAME 100 COUNT BOTTLE AS WAS LOGGED IN ON 01/24/06, AND WAS ASKED TO RETURN 50 TABLETS IN AN HDPE BOTTLE AND RETURN THE BOTTLE.
 THERE WERE A TOTAL OF 76 TABLETS IN THE BOTTLE AT THIS TIME. B. TOMAS RETURNED THE NY-TANNIC™ COMMERCIAL BOTTLE BACK FROM ME WITH ONLY 26 TABLETS.
 THE 50 TABLET SAMPLE WAS PLACED WITH OUR OTHER TABLET RETURNS IN RA. 1574 AND LABELED ACCORDINGLY.

26 tablets given to Janet for sending outside as per Alex.

Samson 3/20/06

N/A

Using a commercial 17mL bottle and Vials VPS pure, WE ATTEMPTED TO PASS COMMERCIAL FLUTICASONIDE PROPIONATE NASAL SPREY (LOT # C1874889) THROUGH THE ASTEROL ASSEMBLY.
 THREE = 10.98g (17mL bottle + VPS amp, cap, & vial lock)
 Gross = 25.550g (amp assembly + bottle + suspension)
 NET = 14.57g
 Four to six remaining sprays were attempted by K. KALE, AFTER WHICH A UNIFORM PLUME WAS OBSERVED.

N/A

Project No. _____
Book No. _____

TITLE PHYSICAL TESTING: SOMA SR #1048-12 & 82
INITIAL vs. 3+ MONTH 40/75. 03/21/06

From Page No. NA

Physical Testing: Soma 700mg SR Tablets #1048-12 & 82

Upper Comp. (kN)	Target Wt. (mg)	Tablet #	Weight (g)	Hardness (SCU)	Friability
1048-12	1000	1	1.0324	23.1	Initial Wt (g) = 10.0660
@		2	0.9939	17.5	Final Wt (g) = 10.0250
20kN		3	0.9809	15.8	%Friable = 0.44
(Initial)		4	0.9899	17.2	
		5	0.9932	17.8	
1048-12	1000	1	1.0052	21.5	Initial Wt (g) = 9.9338
@		2	1.0027	20.3	Final Wt (g) = 9.8774
20kN		3	0.9893	20.5	%Friable = 0.18
(40°C/75%RH)		4	1.0022	20.6	
		5	0.9949	20.2	
1048-82	1000	1	1.0102	28.3	Initial Wt (g) = 10.1100
@		2	1.0018	25.7	Final Wt (g) = 10.0917
20kN		3	1.0121	27.6	%Friable = 0.18
(Initial)		4	1.0163	29.4	
		5	1.0102	28.0	
1048-82	1000	1	1.0075	28.5	Initial Wt (g) = 10.0430
@		2	1.0079	29.5	Final Wt (g) = 10.0236
20kN		3	1.0140	29.5	%Friable = 0.18
(40°C/75%RH)		4	1.0048	28.1	
		5	0.9994	25.4	

**Hardness readings in bold = tablets that capped during testing

John S. Deacony
0.0000 g
SOMA SR 700mg
1.0052 g
1.0027 g
0.9993 g
1.0022 g
0.9949 g
9.9338 g
9.8774 g
1.0075 g
1.0079 g
1.0140 g
1.0048 g
0.9994 g

1048-12
with
DESICCANT

1048-82

NR	5	NR	5
XM	20.6 SC	XM	28.2 SC
SREL	2.8 %	SREL	6.0 %
SD	0.6 SC	SD	1.8 SC
XMIN	20.2 SC	XMIN	25.4 SC
XMAX	21.6 SC	XMAX	29.5 SC
5	20.2 SC	5	25.4 SC
4	20.6 SC	4	28.1 SC
ZERO		3	29.5 SC
3	20.5 SC	2	29.5 SC
ZERO		1	28.5 SC
2	20.3 SC		
1	21.6 SC		

NA

To Page No. NA

Recorded by: *John S. Deacony* Date: 03/21/06 Verified by: *ap* Date: 24 Oct 07

Project No. _____
Book No. _____

TITLE PHYSICAL TESTING: SOMA SR #1038-19, 20, 21, 22
INITIAL vs. 3+ MONTH 40/75. 03/21/06

From Page No. NA

Physical Testing: Soma 700mg SR Tablets #1038-19, 20, 21, & 22

Batch #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1038-19	1000	1	0.9971	6.58	23.7	Initial Wt (g) = 9.9650
		2	0.9947	6.60	25.3	Final Wt (g) = 9.9410
		3	1.0048	6.65	25.3	%Friable = 0.18
		4	0.9940	6.60	25.0	
		5	0.9951	6.68	23.8	
		6	0.9990	6.60	25.7	
		7	0.9989	6.58	26.7	
		8	0.9931	6.60	24.0	
		9	0.9912	6.57	25.3	
		10	0.9912	6.59	22.8	
1038-20	900	1	0.9926	6.60	27.0	Initial Wt (g) = 9.9850
		2	0.9977	6.81	24.5	Final Wt (g) = 9.9500
		3	0.9996	6.82	28.8	%Friable = 0.18
		4	0.9985	6.63	26.4	
		5	1.0018	6.62	28.8	
		6	0.9839	6.57	25.0	
		7	1.0011	6.59	27.0	
		8	1.0001	6.66	27.6	
		9	0.9901	6.60	26.9	
		10	1.0080	6.65	31.0	
1038-21	900	1	1.0070	6.85	27.9	Initial Wt (g) = 9.9780
		2	0.9983	6.58	24.3	Final Wt (g) = 9.9370
		3	1.0019	6.53	26.9	%Friable = 0.18
		4	0.9997	6.60	24.8	
		5	0.9914	6.57	24.0	
		6	0.9980	6.60	24.3	
		7	1.0062	6.64	29.7	
		8	0.9875	6.53	25.6	
		9	0.9980	6.59	27.8	
		10	0.9918	6.56	22.8	
1038-22	900	1	1.0088	6.55	20.0	Initial Wt (g) = 10.0720
		2	1.0108	6.52	25.4	Final Wt (g) = 10.0320
		3	1.0063	6.52	21.6	%Friable = 0.18
		4	0.9983	6.53	19.6	
		5	1.0021	6.57	24.0	
		6	1.0107	6.52	22.6	
		7	1.0028	6.52	23.2	
		8	1.0041	6.52	24.7	
		9	1.0134	6.51	31.3	
		10	1.0065	6.52	27.5	

**Hardness readings in bold = tablets that capped during testing

TESTING PERFORMED BY A. FAVATA WEEK OF 03/13/06

John S. Deacony
1038-19, 20, 21, 22

XM	24.0 SC
SREL	14.7 %
SD	3.5 SC
XMIN	19.6 SC
XMAX	31.3 SC
10	27.5 SC
9	31.3 SC
8	24.7 SC
7	23.2 SC
6	22.6 SC
5	24.0 SC
4	19.6 SC
3	21.5 SC
2	25.4 SC
1	20.0 SC



To Page No. NA

Recorded by: *John S. Deacony* Date: 03/21/06 Verified by: *ap* Date: 24 Oct 07

Project No. _____

Book No. _____

TITLE PHYSICAL TESTING: SOMA SR # 1038-24, 25, 26 03/21/06

From Page No. NA

John S. Wilcox 03/21/06

Physical Testing: Soma 700mg SR Tablets #1038-24, 25, & 26

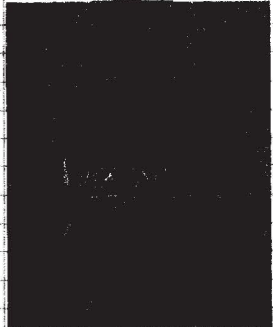
Batch #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1038-24	1000	1	1.0067	6.52	27.3	Initial Wt (g) =
		2	1.0081	6.55	24.7	10.0910
		3	1.0073	6.53	26.7	Final Wt (g) =
		4	1.0097	6.56	26.3	10.0500
		5	1.0098	6.55	23.2	
		6	1.0046	6.54	26.9	
		7	1.0047	6.53	27.6	
		8	1.0051	6.53	24.8	
		9	0.9978	6.52	25.6	
		10	1.0206	6.55	27.5	%Friable =
1038-25	1000	1	1.0076	6.71	26.7	Initial Wt (g) =
		2	1.0032	6.67	28.1	10.0490
		3	0.9952	6.68	28.3	Final Wt (g) =
		4	0.9960	6.67	26.8	10.0180
		5	0.9954	6.67	28.3	
		6	1.0051	6.68	29.2	
		7	1.0036	6.68	22.4	
		8	1.0043	6.68	26.6	
		9	1.0061	6.70	27.9	
		10	1.0300	6.68	27.6	%Friable =
1038-26	1000	1	1.0061	6.53	27.3	Initial Wt (g) =
		2	1.0016	6.50	27.2	10.0480
		3	0.9966	6.50	29.2	Final Wt (g) =
		4	1.0003	6.50	26.3	9.9980
		5	1.0061	6.52	28.2	
		6	1.0020	6.50	26.6	
		7	1.0074	6.51	29.1	
		8	0.9926	6.47	25.6	
		9	0.9984	6.48	26.0	
		10	1.0036	6.52	25.1	%Friable =

NR 10
 XM 27.0 SC
 SREL 5.2 %
 SD 1.5 SC
 XMIN 25.1 SC
 XMAX 29.2 SC

10 25.1 SC
 9 26.0 SC
 8 25.6 SC
 7 29.1 SC
 ZERO 6 26.6 SC
 ZERO 5 28.2 SC
 ZERO 4 26.3 SC
 ZERO 3 29.2 SC
 ZERO 2 27.2 SC
 1 27.3 SC

**Hardness readings in bold = tablets that capped during testing

NA



To Page No. NA

Recorded by: *John S. Wilcox* Date: 03/21/06 Verified by: *QAT* Date: 24 Oct 07

Project No. _____

Book No. _____

TITLE ASTELIN 03-33 REGISTRATION BATCHES 03/21/06

03/21/06 99

From Page No. NA

Registration Batches - Decatur 03/2006

Batch # 03-33-03c
DOM: 03/13/06
Batch Size: 3300L

No problems occurred during the making of this batch. This batch was made in the 940 gallon processing tank, samples were taken according to E-Req 1112 sampling record (see below), the batch was filtered through a Millipore 0.45 micron PVDF 20" filter (code # CVHL-72P-P3), and transferred into the 940 gallon holding tank.

JS 03/21/06

E-Requisition 1112

SAMPLING RECORD

03-33-05c
03-33-04s
Batch Number: 03-33-03c

Bulk Solution

ACTIVITY	SAMPLE LOCATION	VOLUME REQUIRED	PURPOSE	COLLECTED BY/DATE
PROCESSING Following Step 11	Top of Compounding Tank	2 x 300 mL	Azelastine and BAC Assay	<i>NA</i>
	Bottom of Compounding Tank	2 x 300 mL	Azelastine and BAC Assay	
PROCESSING Following Step 18	Top of Holding Tank	2 x 300 mL	Azelastine and BAC Assay	
	Bottom of Holding Tank	2 x 300 mL	Azelastine and BAC Assay	
PROCESSING Final Bulk Solution Prior to Packaging	Top of Holding Tank	1 x 300 mL	Specific Gravity	
		1 x 500 mL	Spray Pattern Test Solution	
		approx. 220 mL	Microbial Limits	
		2 x 500 mL	Bulk Release Testing	
		2 x 500 mL (glass bottles)	Bulk Retain	

The only point of note is that during the filtration process it became clear that the filtration rate slowed considerably after approximately the 1-hour mark. At this time, I began charting the filtration rate (see pg. 101), and will continue to do so for the three remaining batches, for comparison.

John S. Wilcox 03/21/06

Recorded by: *John S. Wilcox* Date: 03/21/06 Verified by: *QAT* Date: 24 Oct 07

To Page No. 100

Project No. _____

Book No. _____

TITLE ASTELIN 03-33 REGISTRATION BATCHES 03/21/06

00

from Page No. 99

Batch # 03-33-04s
DOM: 03/14/06
Batch Size: 330L

During the compounding of this batch, specifically steps # 8 through 11, it was observed that the 250 gallon processing tank began to shake (as it is equipped with shock-absorbing technology to counteract the force of the moving liquid inside) at a speed that caused the batch to "roll" or slosh around the inside of the tank, thus causing a loss of any true vortex. Without baffles to aid in the breaking up of the active and excipients, it was determined that the mixing speeds should be adjusted upwards until a suitable vortex could be obtained again.

Once this was done, no further problems arose in the manufacturing of the batch.

Samples were taken according to E-Req 1112 sampling record. The batch was filtered through a Millipore 0.45 micron PVDF 20" filter (code # CVHL-72P-P3), and transferred into a 375 gallon holding tank.

These new (greater) mixing speeds will be used for the two remaining 330L batches as well.

Batch # 03-33-05s
DOM: 03/15/06

No problems occurred during the making of this batch. This batch was made in the 250 gallon processing tank, samples were taken according to E-Req 1112 sampling record, the batch was filtered through a Millipore 0.45 micron PVDF 20" filter (code # CVHL-72P-P3), and transferred into a 375 gallon holding tank.

Batch # 03-33p-03s
DOM: 03/16/06

No problems occurred during the making of this batch. This batch was made in the 250 gallon processing tank, samples were taken according to E-Req 1113 sampling record (see below), the batch was filtered through a Millipore 0.45 micron PVDF 20" filter (code # CVHL-72P-P3), and transferred into a smaller holding tank.

ATTACHMENT D
SAMPLING RECORD

Batch Number: 03-33p-03s

Bulk Solution

ACTIVITY	SAMPLER LOCATION	AMOUNT REQUIRED	PURPOSE	COLLECTED BY/DATE
PROCESSING Final Bulk Solution	Top of holding tank	approx. 220 mL	Microbial Limits	N/A
		2 x 500 mL	Release Testing	
		8 x 500 mL	Bulk Retain	

To Page No. 101

Recorded by: *John S. Berman*

Date: 03/21/06

Verified by: *Em Bahwani*

Date: 10/25/07

Project No. _____

Book No. _____

TITLE ASTELIN 03-33 REGISTRATION BATCHES 03/21/06

101

Page No. 100

Astelain 03-33 Registration Batches

Batch # 03-33-03c
D of M: 3/13/2006

Time	Batch Weight (kg)	Δ weight (kg)	
14:18	3350	n/a	after qs
15:20	214	3136	
15:21	200	14	
15:22	188	14	
15:23	174	12	
15:24	162	12	
15:25	150	12	
15:26	138	12	
15:27	126	12	
15:28	116	10	
15:29	104	12	
15:30	94	10	
15:31	84	10	
15:32	74	10	
15:33	64	10	
15:34	56	8	
15:35	48	8	
15:36	40	8	
15:37	30	10	
15:38	24	6	
15:39	14	10	
15:40	6	8	
15:41	4	2	
15:42	4	0	

Batch # 03-33-04s
D of M: 3/14/2006

Time	Batch Weight (kg)	Δ weight (kg)	
13:10:00	335	n/a	after qs
13:10:30	323	12	filter purge
13:11:00	313	10	
13:11:30	308	5	
13:12:00	302	6	
13:12:30	287	15	
13:13:00	265	22	
13:13:30	240	25	
13:14:00	213	27	
13:14:30	186	27	
13:15:00	159	27	
13:15:30	131	28	
13:16:00	103	28	
13:16:30	75	28	
13:17:00	47	28	
13:17:30	18	29	
13:18:00	0	18	

Batch # 03-33-05s
D of M: 3/15/2006

Time	Batch Weight (kg)	Δ weight (kg)	
12:35:00	335	n/a	after qs
12:35:30	328	7	after sampling
12:36:00	308	20	after filter purge
12:36:30	270	38	
12:36:30	224	46	
12:37:00	178	46	
12:37:30	133	45	
12:38:00	88	45	
12:38:30	43	45	
12:39:00	2	41	
12:39:30	2	0	
12:40:00	0	2	

Batch # 03-33p-03s
D of M: 3/16/2006

Time	Batch Weight (kg)	Δ weight (kg)	
12:42:00	335	n/a	after qs
12:42:30	306	29	after filter purge
12:43:00	292	14	
12:43:00	248	44	
12:43:30	203	45	
12:44:00	158	45	
12:44:30	114	44	
12:45:00	71	43	
12:45:30	37	34	
12:49:00	34	3	
12:49:30	3	31	
12:50:00	3	0	

* FILTRATION WAS PAUSED AS THE HOLDING TANK WAS NEARING CAPACITY. WE ESTIMATED THAT THERE WAS ENOUGH ROOM & RESUMED FILTRATION.

John S. Berman 03/21/06
N/A

03/21/06
JTB
101

To Page No. 101

Recorded by: *John S. Berman*

Date: 03/21/06

Verified by: *Em Bahwani*

Date: 10/25/07

Project No. _____

Book No. _____

TITLE TUSSI-ORGANIDIN NR LIQUID 04/04/06

From Page No. N/A

Product: TUSSI-ORGANIDIN NR LIQUID

Form #: 1044-102P

Re: Codeine placebo of Tussi-Organidin NR for analytical testing.

BATCH SIZE: 2.000 L theoretical SG = 1.125

#	Ingredient	Code #	Lot #	mg per 5mL	theor. grams per batch (g)	actual grams per batch (g)
1	Guaifenesin USP	4055	000002356	100.0	40.00	40.014
3	Sodium Benzoate NF	0168	2L 2508	5.0	2.00	2.007
4	Saccharin Sodium USP	7260	000001994	2.0	0.80	0.806
5	Citric Acid Anhydrous USP	1134	000001292	4.6	1.84	1.848
6	Propylene Glycol USP	6257	0D0508	500.0	200.00	200.2
7	Glycerin USP	5100	000002135	2160.0	863.50	863.5
8	Sorbitol Solution 70% USP	8135	000001230	1000.0	400.00	400.0
9	Dye: FD&C Red #40	3073	000002602	1.0	0.40	0.402
10	Flavor: Raspberry	3425	000002416	18.7	7.48	7.487
11	Water, purified	8542	Q.S. (to make 2249.4g)			
TOTAL:					2249.4 g	

Theoretical specific gravity is 1.125 based on Processing Batch Record

Batch produced in Room #133

Manufacturing Procedure:

- In a stainless steel beaker (FINAL CONTAINER 724.8 g tare), add approximately 600g of Purified water.
- With mixing, add the Red #40 (J) to the beaker and mix until uniform.
- Lower the mixing speed and slowly add the Propylene Glycol (J) and mix until uniform.
- Raise the mixing speed again to obtain a sufficient vortex and add the Guaifenesin (J), mixing until the solution is complete. Mixing Time: 5 min.
- Lower the mixing speed and add the Glycerin (J) and Sorbitol Solution (J). Mix until uniform. Mixing Time: 5 min.
- Raise the mixing speed and slowly add the following, mixing after each until the solution is complete:
Sodium Benzoate (J)
Saccharin Sodium (J)
Citric Acid (J)
Raspberry Flavor (J)
- Adjust the batch weight to 2249.4g with Purified water.
Before adjustment: Gross: 3097.6 Tare: 724.8 Net: 2372.8
After Adjustment: Gross: N/A Tare: N/A Net: N/A
- Mix for 10 minutes or until uniform.

Mixing Time: _____ Final pH: _____ (date _____), Final Viscosity: _____ (date _____)
Viscosity Testing - spindle # _____, 60 RPM for 1 minute @ 25°C

BATCH HAS BEEN OVER-DILUTED WITH RINSE WATER DURING MANUFACTURING. WILL BE REPEAT

JSD 04/04/06

John S. Bahwani 04/04/06

To Page No. N/A

Recorded by: John S. Bahwani Date: 04/04/06 Verified by: Em Bahwani Date: 10/25/07

Project No. _____

Book No. _____

TITLE TUSSI-ORGANIDIN NR LIQUID 04/05/06 103

From Page No. N/A

Product: TUSSI-ORGANIDIN NR LIQUID

Form #: 1044-103P

Re: Codeine placebo of Tussi-Organidin NR for analytical testing.

BATCH SIZE: 2.000 L theoretical SG = 1.125

#	Ingredient	Code #	Lot #	mg per 5mL	theor. grams per batch (g)	actual grams per batch (g)
1	Guaifenesin, USP	4055	000002356	100.0	40.00	40.009
3	Sodium Benzoate, NF	0168	2L 2508	5.0	2.00	2.007
4	Saccharin Sodium, USP	7260	000001994	2.0	0.80	0.802
5	Citric Acid, USP, Anhydrous	1134	000001292	4.6	1.84	1.842
6	Propylene Glycol, USP	6257	0D0508	500.0	200.00	200.0
7	Glycerin, USP	5100	000002135	2160.0	863.50	863.5
8	Sorbitol Solution, USP, 70%	8135	000001230	1000.0	400.00	400.0
9	Dye: FD&C Red #40	3073	000002602	1.0	0.40	0.405
10	Flavor: Raspberry	3425	000002416	18.7	7.48	7.484
11	Water, purified	8542	Q.S. (to make 2249.4g)			
TOTAL:					2249.4 g	

Theoretical specific gravity is 1.125 based on Processing Batch Record

Batch produced in Room #133

Manufacturing Procedure:

- In a stainless steel beaker (FINAL CONTAINER 598.5 g tare), add approximately 600g of Purified water.
- With mixing, add the Red #40 (J) to the beaker and mix until uniform.
- Lower the mixing speed and slowly add the Propylene Glycol (J) and mix until uniform.
- Raise the mixing speed again to obtain a sufficient vortex and add the Guaifenesin (J), mixing until the solution is complete. Mixing Time: 5 min.
- Lower the mixing speed and add the Glycerin (J) and Sorbitol Solution (J). Mix until uniform. Mixing Time: 10 min.
- Raise the mixing speed and slowly add the following, mixing after each until the solution is complete:
Sodium Benzoate (J)
Saccharin Sodium (J)
Citric Acid (J)
Raspberry Flavor (J)
- Adjust the batch weight to 2249.4g with Purified water.
Before adjustment: Gross: 2720.5 Tare: 598.5 Net: 2122.0
After Adjustment: Gross: 2847.9 Tare: 598.5 Net: 2249.4
- Mix for 10 minutes or until uniform.

Amount of water needed 127.4 g to bring final net weight to 2249.4g

Mixing Time: 20 min., Final pH: 4.25 (date 04/05/06), Final Viscosity: 18.0 cps (date 04/05/06)
Viscosity Testing - spindle # 2, 60 RPM for 1 minute @ 25°C

John S. Bahwani 04/05/06

To Page No. N/A

Recorded by: John S. Bahwani Date: 04/05/06 Verified by: Em Bahwani Date: 10/25/07

Project No. _____

Book No. _____

TITLE ASTELIN 03-33 REG. BATCHES 03/24/06

From Page No. 104

Astelin 03-33 Registration Batches

John S. Wilcox 03/24/06

Batch # 03-33-03c
DOM: 3/13/2006

Time	Batch Weight (kg)	Amount Filtered (kg)	Δ weight (kg)	Rate (kg/min)
14:18	3350	n/a	n/a	n/a
15:20	214	3136	3136	50.6
15:21	200	3150	14	14.0
15:22	186	3164	14	14.0
15:23	174	3176	12	12.0
15:24	162	3188	12	12.0
15:25	150	3200	12	12.0
15:26	138	3212	12	12.0
15:27	126	3224	12	12.0
15:28	116	3234	10	10.0
15:29	104	3246	12	12.0
15:30	94	3256	10	10.0
15:31	84	3266	10	10.0
15:32	74	3276	10	10.0
15:33	64	3286	10	10.0
15:34	56	3294	8	8.0
15:35	48	3302	8	8.0
15:36	40	3310	8	8.0
15:37	30	3320	10	10.0
15:38	24	3326	6	6.0
15:39	14	3336	10	10.0
15:40	6	3344	8	8.0
15:41	4	3346	2	2.0
15:42	4	3346	0	0.0

Batch # 03-33-04s
DOM: 3/14/2006

Time	Batch Weight (kg)	Amount Filtered (kg)	Δ weight (kg)	Rate (kg/min)
13:10:00	335	n/a	n/a	n/a
13:10:30	323	12	12	n/a
13:11:00	313	22	10	22.0
13:11:30	308	27	5	15.0
13:12:00	302	33	6	11.0
13:12:30	287	48	15	21.0
13:13:00	285	70	22	37.0
13:13:30	240	95	25	47.0
13:14:00	213	122	27	52.0
13:14:30	186	149	27	54.0
13:15:00	159	176	27	54.0
13:15:30	131	204	28	55.0
13:16:00	103	232	28	56.0
13:16:30	75	260	28	56.0
13:17:00	47	288	28	56.0
13:17:30	18	317	29	57.0
13:18:00	0	335	18	47.0

N/A

To Page No. 105

Recorded by: *John S. Wilcox*

Date 03/24/06

Verified by: *Em Balwani*

Date 10/25/07

Project No. _____

Book No. _____

TITLE ASTELIN 03-33 REGISTRATION BATCHES 03/24/06 105

From Page No. 104

John S. Wilcox 03/24/06

Batch # 03-33-05s
DOM: 3/15/2006

Time	Batch Weight (kg)	Amount Filtered (kg)	Δ weight (kg)	Rate (kg/min)
	335	n/a	n/a	n/a
12:35:00	328	n/a	7	n/a
12:35:30	308	n/a	20	n/a
12:36:00	270	65	38	58.0
12:36:30	224	111	46	84.0
12:37:00	178	157	46	92.0
12:37:30	133	202	45	91.0
12:38:00	88	247	45	90.0
12:38:30	43	292	45	90.0
12:39:00	2	333	41	86.0
12:39:30	2	333	0	41.0
12:40:00	0	335	2	2.0

Batch # 03-33p-03s
DOM: 3/16/2006

Time	Batch Weight (kg)	Amount Filtered (kg)	Δ weight (kg)	Rate (kg/min)
	335	n/a	n/a	n/a
12:42:00	306	n/a	29	n/a
12:42:30	292	43	14	43.0
12:43:00	246	87	44	58.0
12:43:30	203	132	45	89.0
12:44:00	158	177	45	90.0
12:44:30	114	221	44	89.0
12:45:00	71	264	43	87.0
12:45:30	37	298	34	77.0
12:49:00	34	301	3	37.0
12:49:30	3	332	31	34.0
12:50:00	3	332	0	31.0

N/A

To Page No. 106

Recorded by: *John S. Wilcox*

Date 03/24/06

Verified by: *Em Balwani*

Date 10/25/07

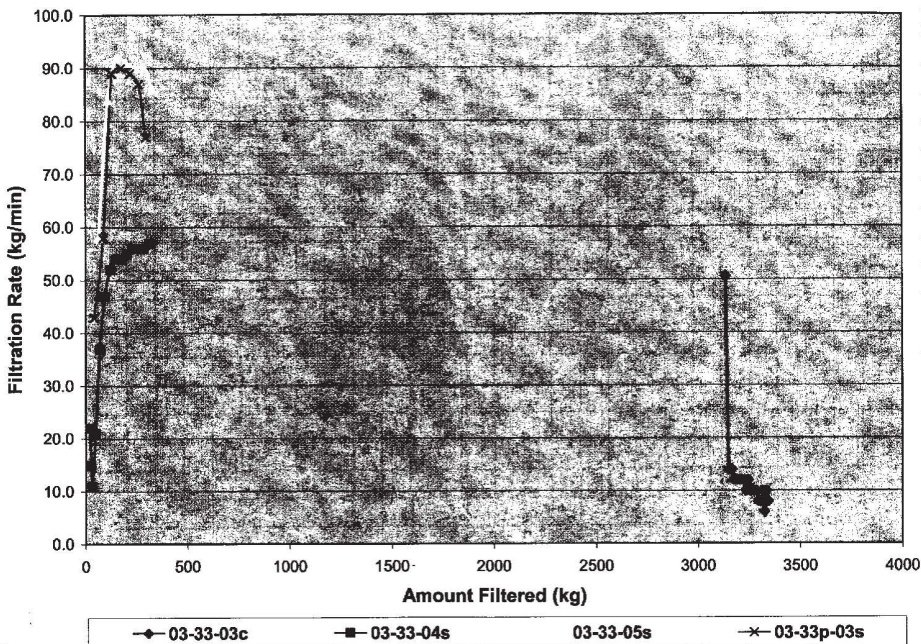
Project No. _____

Book No. _____

TITLE ASTELIN 03-33 REG. BATCHES

03/24/06

Filtration Study: Astelin Registration Batches
(Decatur - March 2006)



To Page No. N/A

Recorded by: John S. DeWitt

Date: 03/24/06

Verified by: Em Bahwani

Date: 10/25/07

Project No. _____

Book No. _____

TITLE ASTELIN #1027-17 FREEZE/THAW

03/27/06 107

From Page No. N/A

AT THE REQUEST OF CYAMAC, 20 BOTTLES OF ASTELIN REFORMULATED #1027-17 WERE PLACED ON FREEZE/THAW STABILITY.

TEN BOTTLES WERE NUMBERED & PLACED UPRIGHT
TEN BOTTLES WERE NUMBERED & PLACED IN THE PRONE POSITION.

THEY WERE PLACED IN THE FREEZER IN ROOM #129 AND WILL UNDERGO FREEZE/THAW WITH EXTREME DIFFERENCES. (FROM FREEZER TO 40°C OVEN).

WED. 03/29/06: 20 SAMPLES MOVED FROM FREEZER IN ROOM #129 TO 40°C/AMBIENT OVEN IN STABILITY CHAMBER ROOM = THAW #1.

FRI. 03/31/06: 20 SAMPLES, WHICH HAVE THAWED, ARE REMOVED FROM THE 40°C OVEN AND RETURNED TO THE FREEZER IN ROOM #129. NO CHANGES TO THE OUTSIDE OF THE CONTAINERS OBSERVED.

MON. 04/03/06: 20 SAMPLES ARE MOVED FROM THE FREEZER IN RM. #129, BACK TO THE 40°C/AMBIENT OVEN IN THE STABILITY CHAMBER ROOM FOR THAW #2.

WED. 04/05/06: 20 SAMPLES ARE MOVED FROM 40°C/AMBIENT OVEN, TO THE FREEZER IN ROOM #129 FOR FREEZE #3. NO CHANGES TO THE OUTSIDE OF THE CONTAINERS WAS OBSERVED.

FRI. 04/07/06: 20 SAMPLES REMOVED FROM FREEZER & PLACED IN 40°C/AMBIENT. NO CHANGES OBSERVED UPON FREEZE #3.

MON. 04/10/06: 20 SAMPLES REMOVED FROM 40°C/AMBIENT AFTER THAW #3. NO CHANGES OBSERVED TO THE OUTSIDE OF THE CONTAINER.

BOTTLES WILL BE PLACED IN STABILITY LAB FOR RETAIN/POSSIBLE FUTURE TESTING.

JSD 04/11/06

To Page No. N/A

Recorded by: John S. DeWitt

Date: 03/27/06

Verified by: Em Bahwani

Date: 10/25/07

From Page No. 108 POST DECATUR TRIP SUMMARY BY K.KALE

E1112: Post Manufacturing Observations Report.

Authors: John D'Aconti & Kalidas Kale

Date: March 24, 2006

3300L Batch

In the week of March 13th four batches of Astelin Improved taste were manufactured. One full scale, 3300 liter size registration batch (Batch Number 03-33-03C), two 330 liter size batches (batch numbers 03-33-04S and 03-33-05S) and one 330 liter size placebo batch (batch number 03-33P-03S) were manufactured.

The 3300 liter size batch was prepared in the 940 gallon capacity processing tank. During the filtration of this batch after one hour, the filtration rate was considerably decreased. At this point 3136 kg of material was filtered. From this time onward filtration rate as a function of time was measured. The filtration rate at this point was only 14 liters per minute; it decreased to 8 liters per minute at the end of the filtration, when all liquid was filtered. The total batch was filtered within one hour and twenty four minutes.

The filter used was Durapore Cartridge filter without prefilter 20 inch, 0.45 micron from Millipore Corporation. The filtration area of this filter was 1.38 m². To maintain the good filtration rate throughout the filtration step, there are two options, either use same size filter with a prefilter or use 30 inch cartridge with larger filtration area 2.07 m². These options will be evaluated during the next manufacture of 3300 liter size batches.

330 liter size batches

Batch# 03-33-04S

These batches were processed in the 250 gallon capacity processing tanks. It was observed that at the time of addition of Azelastine HCl (step 8) the liquid was sloshing around the processing tank at the stirrer speed of 120 (+20) rpm. To create a vortex for proper mixing conditions, the stirrer speed was increased to 200 rpm. In step 9 the proper vortex was achieved at 175 rpm. In step 10 the stirrer speed was 175 rpm. In step 11 it was 125 rpm. Total batch was filtered without slowdown of the filtration rate.

Batch# 03-33-05S and Batch # 03-33P-03S

The stirrer speed was maintained at the same rate as used in the manufacture of batch# 03-33-04S. These two batches were filtered without slowdown of the filtration rate.

John D'Aconti 03/27/06

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Recorded by: *John D'Aconti*

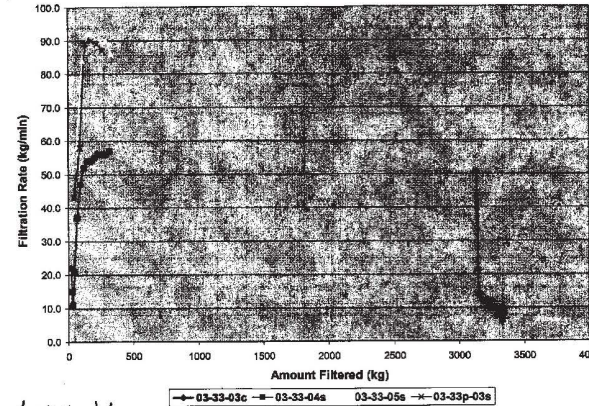
Date: 03/27/06

Verified by: *Em Bahwani*

Date: 10/25/07

From Page No. 108

Filtration Study: Batches made in Decatur E1112



John D'Aconti 03/27/06

NA

To Page No. 109

Recorded by: *John D'Aconti*

Date: 03/27/06

Verified by: *Em Bahwani*

Date: 10/25/07

Project No. _____
Book No. _____

TITLE ASTELIN NASAL SPRAY
FUSS-ORANGEADIN AIR JSD 04/06/06 04/07/06
FORM. 03-33

From Page No. 111

Product: Astelin® Nasal Spray pg. 1044-110

Re: Lab batch to match Investigational Formulation 03-33, for Analytical Testing.

Ingredient	Code #	Lot #	%w/v	Theo. grams per batch	Actual grams per batch
Azelastine HCl	1105	000002047	0.100%	2.000	2.011
HPMC 2910, USP	3340	000002822	0.100%	2.000	2.002
Sorbitol Solution, USP, 70%	8135	000001230	6.446%	128.920	128.9
Sucralose, NF	7474	04073	0.150%	3.000	3.008
Edetate Disodium, USP	1349	000002353	0.050%	0.500	0.502
Sodium Citrate, USP, Dihydrate	0734	2C1804	0.068%	1.360	1.368
Benzalkonium Chloride, NF, 50% Soln.	2202	1C1304	0.025%	0.500	0.502
Water, Purified or Deionized			QS to 100%	QS to 2030.0g	

Manufacturing Procedure

- To a suitably sized container (tare weight 726.7 g), obtain 740g of deionized water. Begin mixing and heat to 80°C (175°F). Record the temperature. While mixing, *Slowly* add the HPMC (\checkmark) to the vortex of the mixing water.
Mix for 20 minutes or until the mixture is lump-free. Record the mixing time. Do NOT let the mixture cool to below 60°C (140°F) while mixing. Temp: 80 °C Mixing Time: 20 min.
 - Add approx. 1000g of deionized water. Cool to 32°C (90°F). Record the temperature. Temp: 28 °C
 - Add the Azelastine HCl (\checkmark), mixing until completely dissolved. Record the mixing time and temperature. Temp: 28 °C Mixing Time: 10 min.
 - Add the following ingredients, one at a time, to the mixture: sucralose (\checkmark), sorbitol solution (\checkmark), EDTA (\checkmark), sodium citrate (\checkmark). Mix after each until solution is clear and record the overall mixing time. Mixing Time: 20 min.
 - Add the Benzalkonium Chloride (\checkmark) to the batch and mix for 10 minutes. Mixing Time: 10 min.
 - Adjust batch weight to (2030.0g) with deionized water. Mix for 30 minutes or until uniform.
Before adjustment: Gross: 2673.0 g Tare: 726.7 g Net: 1946.3 g
After adjustment: Gross: 2756.7 g Tare: 726.7 g Net: 2030.0 g
- Amount of Water added: 83.7 g to bring final net weight to 2030.0g.
Mixing Time: 30 min. Temperature at end of mixing: 22 °C Description: CLEAR, VERY LITTLE FOAM
- Filter finished product through a 0.22 µm Millipore Stainless Steel High Pressure Filter Holder. Filter Info: MILLIPORE 0.22 µm GVWP14250 LOT# R0AN29130. Discard the first 50mL to 100mL and retain the rest of the product for testing and packaging.
 - Measure the pH, viscosity, and specific gravity (viscosity testing – spindle #2, 60rpm for 1 minute at 25°C).
Final pH: 6.36 (date 04/10/06). Final viscosity: 5.0 cps (date 04/10/06).
Specific Grav.: _____ (date _____) [pyc.: _____ g / pyc+water _____ g / pyc+sample _____ g]

John S. Balwani 04/10/06

DMIT JSD 04/10/06
To Page No. N/A

Recorded by: John S. Balwani Date: 04/07/06 Verified by: Enl Balwani Date: 10/25/07

Project No. _____
Book No. _____

TITLE FUSS ASTELIN NASAL SPRAY
FORM. 03-33P 04/07/06 111

From Page No. N/A

Product: Astelin® Nasal Spray pg. 1044-111

Re: Lab batch to match Investigational Placebo 03-33p, for Analytical Testing.

Ingredient	Code #	Lot #	%w/v	Theo. grams per batch	Actual grams per batch
Azelastine HCl	1105		0.000%	0.000	
HPMC 2910, USP	3340	000002822	0.100%	2.000	2.006
Sorbitol Solution, USP, 70%	8135	000001230	6.446%	128.920	128.9
Sucralose, NF	7474	04073	0.150%	3.000	3.009
Edetate Disodium, USP	1349	000002353	0.050%	0.500	0.504
Sodium Citrate, USP, Dihydrate	0734	2C1804	0.068%	1.360	1.361
Benzalkonium Chloride, NF, 50% Soln.	2202	1C1304	0.025%	0.500	0.501
Water, Purified or Deionized			QS to 100%	QS to 2028.0g	

Manufacturing Procedure

- To a suitably sized container (tare weight 724.9 g), obtain 740g of deionized water. Begin mixing and heat to 80°C (175°F). Record the temperature. While mixing, *Slowly* add the HPMC (\checkmark) to the vortex of the mixing water.
Mix for 20 minutes or until the mixture is lump-free. Record the mixing time. Do NOT let the mixture cool to below 60°C (140°F) while mixing. Temp: 78 °C Mixing Time: 20 min.
 - Add approx. 1000g of deionized water. Cool to 32°C (90°F). Record the temperature. Temp: 32 °C
 - Add the Azelastine HCl (\checkmark), mixing until completely dissolved. Record the mixing time and temperature. Temp: _____ °C Mixing Time: _____
PLACEBO
 - Add the following ingredients, one at a time, to the mixture: sucralose (\checkmark), sorbitol solution (\checkmark), EDTA (\checkmark), sodium citrate (\checkmark). Mix after each until solution is clear and record the overall mixing time. Mixing Time: 20 min.
 - Add the Benzalkonium Chloride (\checkmark) to the batch and mix for 10 minutes. Mixing Time: 15 min.
 - Adjust batch weight to (2028.0g) with deionized water. Mix for 30 minutes or until uniform.
Before adjustment: Gross: 2623.0 g Tare: 724.9 g Net: 1898.1 g
After adjustment: Gross: 2752.9 g Tare: 724.9 g Net: 2028.0 g
- Amount of Water added: 129.9 g to bring final net weight to 2028.0g.
Mixing Time: 30 min. Temperature at end of mixing: 28 °C Description: CLEAR, SOME FOAM
- Filter finished product through a 0.22 µm Millipore Stainless Steel High Pressure Filter Holder. Filter Info: MILLIPORE 0.22 µm GVWP14250 LOT# R0AN29130. Discard the first 50mL to 100mL and retain the rest of the product for testing and packaging.
 - Measure the pH, viscosity, and specific gravity (viscosity testing – spindle #2, 60rpm for 1 minute at 25°C).
Final pH: 6.27 (date 04/10/06). Final viscosity: 5.0 cps (date 04/10/06).
Specific Grav.: _____ (date _____) [pyc.: _____ g / pyc+water _____ g / pyc+sample _____ g]

John S. Balwani 04/10/06

DMIT JSD 04/10/06
To Page No. N/A

Recorded by: John S. Balwani Date: 04/07/06 Verified by: Enl Balwani Date: 10/25/07

Project No. _____

Book No. _____

TITLE OSMOLARITY TESTING: OPTIVAR 04/14/06
LOT # 02306A

From Page No. 111

OPTIVAR (AZELASTINE HCl EYE DROPS 0.05%) LOT #02306A WAS RECEIVED FROM CARDINAL, FROM A 250 L BATCH MANUFACTURED ON 04/04/06. IT WILL UNDERGO OSMOLARITY TESTING, AN OSMOLARITY ADJUSTMENT USING SORBITOL SOLUTION, AND REPEAT OSMOLARITY TESTS TO OBSERVE ANY CHANGE.

THE OSMETTE-A AUTOMATIC OSMOMETER (MODEL #5002, SER #HH10073) WAS CALIBRATED AS FOLLOWS:

- TURN TOGGLE TO "OPERATE"
- ALLOW MACHINE TO WARM UP FOR ≈ 15 MIN.
- ADD COOLANT UNTIL FULL
- PREPARE MULTIPLE 500 mOsm/kg & 100 mOsm/kg STD. SAMPLES.
- SET RANGE TO 0-2
OPERATE TO SPECIAL
- PLACE 500 STD INTO MACHINE, ADJUST READING WITH "I" KNOB.
- SWITCH TO OPERATE AND READ A NEW, CLEAN 500 STD.
RESULT = 504. REPEAT: RESULT = 501
- REPEAT WITH 100 mOsm/kg STD, ADJUSTING WITH "II" KNOB.
RESULT = 97, 101
- TEST OPTIVAR SAMPLE (CARDINAL RESULT ≈ 250 mOsm/kg)
RESULT #1 = 242 mOsm/kg
#2 = 241 mOsm/kg

OSMOMETER CALIBRATED... SEE PG. 113 FOR DIRECTIONS FOR OSMOLARITY ADJUSTMENT OF SAMPLE (LOT #02306A) AND RESULTS.

~~N/A~~

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Recorded by: [Signature]

Date: 04/14/06

Verified by: Enl Balwani

Date: 10/25/07

Project No. _____

Book No. _____

TITLE OSMOLARITY TESTING: OPTIVAR 04/14/06

From Page No. 112

ADJUSTMENT #1

Adjustment of Osmolarity of Sorbitol Solution
Azelastrine Hydrochloride Eye Drops 0.05% Lot 02306A, 250 liter batch made at Cardinal. Date 04/04/2006

Amount of Sorbitol Solution Required for the batch = 16666.5g
 Amount of Sorbitol Solution Added in the batch = 16000.5g
 Difference = 666.5g/250 liter
 = 666.5g/253.75 kg
 = 2.6266g/kg
 = 0.0026266g/g

To 10g of the product add 0.02627g of Sorbitol solution.
Measure Osmolarity.

[Signature] 04/14/06

LOT # 02306A = 10.005g
SORBITOL SOL 70% = 0.0274g (LOT # 0000001230)

OSMOLARITY RESULTS:

TEST # 1 = 251 mOsm/kg
TEST # 2 = 251 mOsm/kg

ADJUSTMENT #2

WEIGHED 5x SORBITOL SOLUTION 70% & QS TO 50g TOTAL. (THEO. SORB. = 0.1313g)

SORBITOL SOLUTION, 70% (LOT #000001230) = 0.1390g (ACTUAL)
OPTIVAR (LOT #02306A) QS TO 50g = 50.0048g (ACTUAL)

RETEST 500 mOsm/kg STD = 502
RETEST 100 mOsm/kg STD = 103
ADJUSTED OPTIVAR #2a = 251
ADJUSTED OPTIVAR #2b = 251 mOsm/kg

Recorded by: [Signature]

Date: 04/14/06

Verified by: Enl Balwani

Date: 10/25/07

To Page No. N/A

Project No. _____

Book No. _____

TITLE ASTELIN + STEROID EXPERIMENT

04/24

From Page No. 114

FLUTICASONONE PROPIONATE NASAL SPRAY (LOT #C184889)

17 mL AZELASTINE HCL NS COMMERCIAL BOTTLE + PUMP

= 10.9713 g

BOTTLE w/o PUMP

= 4.5717 g

COMMERCIAL BOTTLE + FLUTICASONONE N.S.

= 19.1669 g

AMOUNT OF FLUTICASONONE N.S. ADDED

= 14.5952 g

AMOUNT OF AZELASTINE HCL NEEDED FOR 0.1% w/v

= 0.0146 g

AMOUNT OF AZELASTINE HCL WEIGHED :

= 0.0158 g (0.0009 g LEFT ON WEIGHBOAT ∴ AMOUNT ADDED = 0.0149 g)

BOTTLE IS THEN SONICATED FOR 15 MINUTES, AND WILL BE OBSERVED.

FINAL SAMPLE APPEARS TO BE UNIFORM, WITH NO PRECIP.

~~N/A~~

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Recorded by: [Signature]

Date 04/24/06

Verified by: Em Bahwani

Date 10/25/07

Project No. _____

Book No. _____

STABILITY TESTING : Soma SR #1048-10, 12, 14

66, 82

04/25/06

Stability Testing: Soma 700mg SR Tablets #1048-10, 12, 14 @ 2 months (40°C/75%RH)

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1048-10 without desiccant	1000	1	0.9827	6.52	18.0	Initial Wt (g) =
		2	1.0075	6.88	21.8	10.0080
		3	1.0009	6.55	19.3	Final Wt (g) =
		4	1.0056	6.57	21.2	9.9590
		5	0.9899	6.67	21.6	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1048-12 without desiccant	1000	1	0.9964	6.80	19.1	Initial Wt (g) =
		2	0.9855	6.77	17.2	9.9660
		3	1.0117	6.85	22.9	Final Wt (g) =
		4	0.9944	6.77	18.4	9.9160
		5	0.9849	6.74	16.8	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1048-14 without desiccant	1000	1	0.9965	7.01	18.0	Initial Wt (g) =
		2	0.9875	7.02	17.7	9.9870
		3	1.0021	7.02	16.5	Final Wt (g) =
		4	1.0006	6.99	18.1	9.9380
		5	1.0072	7.06	17.8	%Friable =

Stability Testing: Soma 700mg SR Tablets #1048-66 & 82 @ 2 months (40°C/75%RH)

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1048-66 with desiccant	950	1	0.9436	6.45	25.1	Initial Wt (g) =
		2	0.9330	6.45	24.7	9.4710
		3	0.9489	6.45	23.8	Final Wt (g) =
		4	0.9484	6.45	29.7	9.4400
		5	0.9586	6.48	27.6	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1048-66 without desiccant	950	1	0.9558	6.49	26.6	Initial Wt (g) =
		2	0.9599	6.54	27.2	9.3760
		3	0.9482	6.48	24.8	Final Wt (g) =
		4	0.9421	6.45	25.0	9.3380
		5	0.9641	6.63	26.3	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1048-82 with desiccant	1000	1	0.9999	6.75	26.3	Initial Wt (g) =
		2	0.9958	6.69	25.9	10.0050
		3	1.0065	6.78	26.4	Final Wt (g) =
		4	0.9885	6.73	26.4	9.9780
		5	0.9987	6.71	26.4	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
1048-82 without desiccant	1000	1	1.0024	6.73	26.2	Initial Wt (g) =
		2	0.9812	6.57	26.1	9.9390
		3	0.9904	6.67	26.7	Final Wt (g) =
		4	0.9513	6.67	27.3	9.9160
		5	0.9957	6.69	26.7	%Friable =

*not enough tablets remaining to perform hardness testing.

10/25/07
Em Bahwani

To Page No. 115

Recorded by: [Signature]

Date 04/25/06

Verified by: QA

Date 24 Oct 07

Project No. 1044 TITLE ASTELIN + STROB EXPERIMENT 04/25/16

Project No. 1044 TITLE ASTELIN + STROB EXPERIMENT 04/25/16

FULTONSONE PROPRIMATE NASH SPray, 50 mg
Lot # C184889 Ex P. Aug. 2007

13.0834g = CENTRIFUGE TUBE THREE WT.
14.5465g = FULTONSONE N.S.

SAMPLE WAS PLACED IN CENTRIFUGE FOR 30 MIN. SUPERSTANT WAS STILL CLOUDY. RETURNED TO CENTRIFUGE FOR AN ADDITIONAL 30 MINUTES.

THE SUPERSTANT WAS STILL CLOUDY. IT WAS MOVED OFF INTO A SCINTILLATION VIAL. THE SAMPLE WAS OPaque WHITE.

A MICROSCOPY SLIDE WAS PREPARED WITH A DROP OF THE SAMPLE AND VIEWED @ 40x MAGNIFICATION. THE SLIDE APPEARED TO BE FREE OF ANY SOLIDS, HOWEVER THE SAMPLE WAS PREPARED TO BE FILTERED.

USING A 10ml SYRINGE AND A 5ml STERILE ACRODISC, THE SAMPLE WAS FILTERED AND PLACED IN A NEW SCINTILLATION VIAL.

THE SAMPLE WAS NOT CLEAR (STILL OPAQUE AND WHITE) IT WAS PASSED THROUGH A 5um STERILE ACRODISC. THE RESULTING SAMPLE WAS STILL OPAQUE. IT WAS NEXT PASSED THROUGH A 1um FILTER. THE RESULTING SAMPLE WAS STILL OPAQUE. IT WAS DECIDED THAT IT WOULD NEXT BE PASSED THROUGH A 0.45um STERILE ACRODISC.

ATTEMPTING TO PASS THE SAMPLE THROUGH THE 0.45um FILTER WAS EXTREMELY DIFFICULT. AFTER ~3ml OF THE SAMPLE WAS PRESSED THROUGH (AND WAS SEEMINGLY CLEAR NOW) THE PRESSURE WAS NECESSARY TO FORCE THE SAMPLE THROUGH THE FILTER WAS MORE THAN THE FILTER COULD WITHSTAND. THE ACRODISC GAVE WAY AROUND ITS CIRCUMFERENCE AND THE REMAINING SAMPLE WAS SPILLED AND LOST. THIS PROCESS WILL BE ATTEMPTED AGAIN TOMORROW.

Recorded by: *John J. Wilentz*

Date: 04/25/16

Verified by: *Ken Bahrman*

Date: 10/25/17

To Page No. 117

Project No. 1044 TITLE ASTELIN + STROB EXPERIMENT 04/25/16

15.3786g = SCINTILLATION VIAL + STIR ROD

23.5168g = VIAL + STIRROD + PRODUCT *

8.1382g = PRODUCT (FULTONSONE N.S. LOT # C184889)

∴ 0.0081g = ASTELINE HCL (LOT # 000002047) TO BE ADDED = 0.1%

∴ 23.5249g = TARGET GROSS WT.

23.52492g = ACTUAL WT. (GROSS)

* THE SAMPLE WAS PREPARED IN A SIMILAR FASHION TO THE SAMPLE FROM 04/15. FULTONSONE PROPRIMATE NASH SPray (LOT # C184889) SAMPLE WAS SEPARATED INTO 50% SOLIDS WET, TO MIX AND SUSPEND THE SAMPLE PROPERLY. THE SPRAY ATTEMPTED WAS CUT OFF THE AMBER GLASS BOTTLE AND POWDERED INTO A 50ml CENTRIFUGE VIAL. THE SAMPLE WAS SHAK FOR ONE HOUR, THE SUPERSTANT POWDERS OFF, THE SOLIDS WERE DISCARDED.

THE SUPERSTANT SAMPLE WAS INTRODUCED INTO A 10ml SYRINGE AND PASSED THROUGH AN UNCONNECTED SERIES OF 5um, 2um, AND 1um STERILE ACRODISC (P.VDF) FILTERS. THE RESULTING SAMPLE WAS THEN SLOWLY AND DIFFICULTLY PASSED THROUGH A 0.45um ACRODISC.

THIS SAMPLE WAS TRANSFERRED INTO A PRE-WETTED SCINTILLATION VIAL CONTAINING A MAGNETIC STIR ROD, A 0.1% W/V BUFFER OF ASTELINE HCL WAS ADDED, USING AN ALUMINUM SHANK, AND THE SAMPLE WAS PLACED ON A STIRRED/HOTPLATE AND MIXED OVERNIGHT.

THE FOLLOWING MORNING THE SAMPLE WAS OBSERVED FOR CLARITY/CLUMPING AND IT WAS FOUND THAT THERE WAS STILL A LARGE PORTION OF THE ASTELINE HCL THAT HAD NOT GONE INTO SOLUTION.

THIS SAMPLE WAS COVERED (GAPPED) AND LABELLED FOR POSSIBLE FURTHER EXAMINATION.

Recorded by: *John J. Wilentz*

Date: 04/26/16

Verified by: *Ken Bahrman*

Date: 10/25/17

To Page No. 118

Project No. 1044 TITLE Asterin + Steroid Experiment 04/27/06
Book No. 1044

THE REMAINING SAMPLE FROM YESTERDAY'S EXPERIMENT WAS PLACED ON A STERILIZING/HEAT PLATE. A THERMOMETER WAS PLACED IN THE SAMPLE.

INITIAL TEMP = 19°C OR OBSERVED CLARITY OF THE SAMPLE.
TARGET TEMP = 60°C

SAMPLE WAS HEATED, WITH STIRRING, TO $\approx 60^\circ\text{C}$ (THERM = 64°C) AND HELD STIRRING FOR 15 MIN. AFTER 15 MIN. THE STIRRING WAS STOPPED AND THE SAMPLE WAS REMOVED FROM THE HEAT.

THE SAMPLE REMAINED TRANSLUCENT AND IT IS ASSUMED THAT IF ALLOWED TO SIT LONG ENOUGH, THE UNDISSOLVED ASTERIN WILL BECOME VISIBLE AGAIN.

AFTER 30+ MIN, NO SOLID WAS VISIBLE. THE NOW WHITE OPAQUE SAMPLE WAS RAISED BACK ON THE STIRRED/HEAT PLATE

INITIAL TEMP = 21°C
TARGET TEMP = 60°C FOR ≈ 15 MORE MIN, OR CLARITY OF SAMPLE.

AFTER ANOTHER 15 MINUTES OF HEAT/MIXING, THE SAMPLE DID NOT CHANGE. IT REMAINS WHITE AND OPAQUE. IT WILL BE ALLOWED TO SETTLE AND FULLY COOL & BE OBSERVED FOR PRECIP. OR ^{OR} 04/27/06

THE FOLLOWING MORNING, (04/28/06) IT IS OBSERVED THAT SOME OF THE SOLID HAS, IN FACT, PRECIPITATED OUT OF THE 1044-117 SAMPLE.

IT IS DEEMED NECESSARY TO SUBMIT 1044-117 TO ANALYTICAL OR ASTERIN TRUE HPLC ASAY, AFTER IT HAS BEEN FILTERED AGAIN THROUGH A 0.45 μm ACRODISC AND FILTER.

Recorded by: *John J. [Signature]*

Date: 04/28/06

Verified by: *Tom Bakran*

Date: 10/25/07

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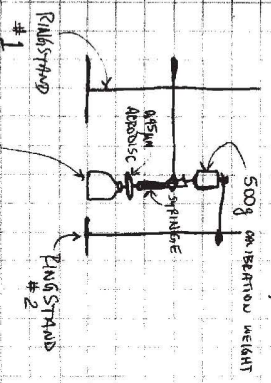
Project No. 1044 TITLE Asterin + Steroid Experiment 04/28/06
Book No. 1044

AS PER K. KANE, THE REMAINING SAMPLE FROM 1044-117 WILL BE PASSED THROUGH A 0.45 μm FILTER AND SUBMITTED FOR ANALYTICAL TESTING.

AT THE REQUEST OF ANHYTONE, AN ADDITIONAL SAMPLE OF FURTHERSOLUBLE WITH SPEAK SUPERNATANT (FILTERED THROUGH 0.45 μm ACRODISC WILL BE PREPARED AND SUBMITTED FOR SIDE-BY-SIDE ANALYSIS/COMPARISON.

ONE MORE 1 SAMPLE FROM LOT # C184889 OF FURTHERSOLUBLE PEROXIMATE NASH-SPEAK, 50mg WAS OBTAINED. THE SAMPLE WAS SHAKEN TO SUSPEND THE MATERIAL, PLACED IN A CENTRIFUGE @ ≈ 3500 RPM FOR 1 HOUR, THE SOLIDS DISPERSED, AND THE SUPERNATANT POURED OFF.

THE SAMPLE WAS THEN RUCED INTO A 10cc SYRINGE AND FILTERED THROUGH 5 μm , 2 μm , AND 1 μm ACRODISC FILTERS (STAGES). THE REMAINING SAMPLE WAS Poured INTO A NEW 10cc SYRINGE AND PLACED INTO A HOME-MADE CONSTANT PRESSURE SYSTEM AND ALLOWED TO SLOWLY FILTER THROUGH A 0.45 μm ACRODISC.



THE RESULTING SAMPLE WAS SUBMITTED TO ANALYTICAL (SPEAK) FOR TESTING, APPROX #1044-119.

Recorded by: *John J. [Signature]*

Date: 04/28/06

Verified by: *Tom Bakran*

Date: 10/25/07

To Page No. 119

Project No. _____

Book No. 1044

TITLE SOMA SR 700 # 27-1847-01c 04/28/06
PHYSICAL TESTING

From Page No. N/A

Physical Testing: Soma 700mg SR Tablets # 27-18-01c

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
27-18a-01c	1000	1	1.0144	6.57	28.5	Initial Wt (g) =
		2	1.0024	6.55	25.7	10.0540
		3	1.0080	6.56	22.8	Final Wt (g) =
		4	1.0087	6.53	27.8	10.0330
		5	1.0045	6.53	26.6	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
27-18b-01c	1000	1	1.0065	6.68	28.3	Initial Wt (g) =
		2	1.0063	6.70	25.6	10.0200
		3	1.0031	6.68	25.7	Final Wt (g) =
		4	1.0008	6.70	28.3	9.9900
		5	0.9881	6.64	26.6	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
27-18c-01c	1000	1	1.0049	6.80	28.2	Initial Wt (g) =
		2	0.9922	6.73	26.2	9.8440
		3	0.9977	6.76	23.5	Final Wt (g) =
		4	0.9815	6.75	27.2	9.8240
		5	0.9915	6.75	26.4	%Friable =

Physical Testing: Soma 700mg SR Tablets # 27-19-01c

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
27-19a-01c	1000	1	0.9918	6.43	25.7	Initial Wt (g) =
		2	0.9905	6.41	26.3	9.9470
		3	0.9913	6.43	23.4	Final Wt (g) =
		4	0.9925	6.43	27.0	9.9220
		5	0.9951	6.48	25.1	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
27-19b-01c	1000	1	1.0058	6.65	26.9	Initial Wt (g) =
		2	1.0095	6.68	28.1	10.0440
		3	1.0051	6.63	27.2	Final Wt (g) =
		4	1.0004	6.63	26.2	10.0260
		5	0.9995	6.62	27.2	%Friable =

Lot #	Target Wt. (mg)	Tablet #	Weight (g)	Thickness (mm)	Hardness (SCU)	Friability
27-19c-01c	1000	1	0.9745	6.55	23.2	Initial Wt (g) =
		2	0.9815	6.80	24.5	9.8170
		3	0.9845	6.58	23.1	Final Wt (g) =
		4	0.9842	6.59	22.1	9.7990
		5	0.9714	6.55	20.9	%Friable =

John S. K... 04/28/06

ACTUAL TESTING PERFORMED BY: A. FAVARA.
ELECTRONIC COPY SUBMITTED TO B. JOHNS.
TABLETS ARE © CLINICAL BATCHES, MANUFACTURED
AT THE DECATUR FACILITY.

To Page No. N/A

Recorded by: [Signature] Date: 04/28/06 Verified by: [Signature] Date: 24 OCT 07

Project No. _____

Book No. 1044

TITLE AZELASTINE SOLUBILITY EXPERIMENT - PEG 400 05/01/06 121

From Page No. N/A

55.4500g = TARE WT. OF 102 FLINT GLASS JAR

58.6771g = JAR + STIR ROD

73.7000g = JAR + STIR ROD + ~15g PEG 400 (LOT # OP10-110)

0.0075g = AZELASTINE @ 0.05% ADDED, ALLOWED TO MIX 15 MIN
STILL UNDISSOLVED. MIX ANOTHER 15 MIN., UNDISSOLVED
MIXED ANOTHER 30 MIN., SOLUTION IS CLEAR.

0.0076g = AZELASTINE ADDED TO BRING TO 0.1%
AFTER 1 HOUR, SOLUTION IS CLEAR.

DECIDED TO RAISE AZELASTINE HCL TO 10 mg/mL,
REFERENCING TABLES OF THE NDA (pg. 603-63)
WHICH STATES PEG 300 SOLUBILITY = 10.2g/mL

0.1500g = TARGET AZEL. HCL

- 0.0151g = ALREADY ADDED.

0.1349g = TO BE ADDED

0.1347g = AZELASTINE ADDED.

SAMPLE ALLOWED TO MIX OVERNIGHT.

DID NOT GO INTO SOLUTION, SAMPLE MILKY WHITE/OPAQUE.

~~N/A~~

To Page No. N/A

Recorded by: [Signature] Date: 05/01/06 Verified by: [Signature] Date: 10/25/07

From Page No. 51

SPECTROPHOTOMETRY RESULTS:

12/05/06: FOLLOWING ABSENCE FROM WORK, SAMPLES WERE NOT TESTED IN AUGUST, AND ARE NOW PARTIALLY (AND SOME TOTALLY) EVAPORATED ∴ WILL NOT BE TESTED.

(Signature)

~~N/A~~

To Page No. N/A

Recorded by: *John S. Wilcox*

Date 12/05/06

Verified by: *Enl Bahmani*

Date 10/25/07

From Page No. N/A

- (A.) 1050 - ALL AZELASTINE HCL ADDED FIRST 0.1%
- 1055 - ALL AZELASTINE HCL IN SOLUTION, SOLUTION CLEAR
- 1100 - ALL NaCMC ADDED 0.2%
- 1130 - SOLUTION CLEAR - ALL IS DISPERSED & IN SOLUTION, CLEAR

- (B.) 1800 - NaCMC ADDED 1.5%... CLEAR AFTER 25 MIN. MIX
- 1030 - ADDED PINCH OF AZELASTINE HCL DOES NOT SEEM TO BE DISSOLVING
- 1055 - ADDED ALL OF AZELASTINE HCL 0.1% DOES NOT SEEM TO BE DISSOLVING
- 100p - AZELASTINE HCL FLOATING, NOT IN SOLUTION
- 300p - AZELASTINE HCL STILL UNDISPERSED / FLOATING IN SOLUTION AND SOME STUCK TO MIXING SHEET.

EXPERIMENTS PERFORMED BY A. FAVARA.

~~N/A~~

To Page No. 154

Recorded by: *John S. Wilcox*

Date 12/05/06

Verified by: *Enl Bahmani*

Date 10/25/07

(A) 1025a - Add 4u 15g Avicel RC-S91 (1.5%)
 Mir ~15 min
 1045a - Add 4u Avicel HLL (0.1%)

RESULT IS A THICK, WHITE MIXTURE. ASTERINE HLL WERE
 GOES INTO SOLUTION. UNDISSOLVED CHUNKS ARE VISIBLE SUSPENDED
 IN A GEL-LIKE MEDIUM.

(B) 1015a - Asterine HLL 0.1% added to water, mixed for
 5 minutes with dissolved
 1050a - Add Avicel RC-S91 1.5% to ^{the} solution,
 mixed for 30 minutes. NEARLY BECOMES A WATER
 SOLUTION.

SEPARATION OCCURS OVERNIGHT. TOP 1/3 IS CLOUDY WITH SOME UNDISSOLVED
 ASTERINE HLL OBSERVED. BOTTOM 2/3 IS THICK, WHITE, OPAQUE MIXTURE
 THAT HAS SETTLED TO THE BOTTOM.

SAMPLE SENT TO AMYTTCH.

EXPERIMENTS PERFORMED BY A. FAYRGA.

~~N/A~~

Recorded by: *[Signature]* Date: 12/05/06 Verified by: *[Signature]* Date: 10/25/07
 To Page No. 155

(A) Asterine HLL 0.15% added to water, mixed for 5 minutes with
 dissolved and clear.
 Avicel RC-S91, 1.5% added next, mixed for 30 minutes, DOES
 NOT MIX EVENLY.
 Final sedimentation is observed.

HAVE THE SAMPLE SETTLES TO BOTTOM AND IS OPAQUE WHITE.
 TOP HALF IS CLOUDY, BUT TRANSLUCENT.

(B) Avicel RC-S91, 1.5%, added to water
 MIXED FOR 15 minutes, RESULTING IN A THICK, OPAQUE MIXTURE.
 A SAMPLE OF THIS IS SUBMITTED TO AMYTTCH.

EXPERIMENTS PERFORMED BY A. FAYRGA.

~~N/A~~

Recorded by: *[Signature]* Date: 12/05/06 Verified by: *[Signature]* Date: 10/25/07
 To Page No. 154

From Page No. 1048-184... EXPERIMENTS BEGUN BY A. FAUPEL

Viscosity Measurement of Methocel Solutions

① METHOCCEL E5 (Lot # TB0901240) @ 5%

MEASURE 50 mL P. WATER, HEAT TO 80°C. ADD METHOCCEL (5g) AND STIR UNTIL DISPERSED. ADD 50 mL OF COLD P. WATER. CONTINUE TO MIX UNTIL SOLUTION IS CLEAR. ALLOW TO REACH ROOM TEMPERATURE. MEASURE VISCOSITY USING BROOKFIELD VISCOMETER

Factor
Visc. Reading: $0.2 \times 100 = 20$ cps

② METHOCCEL E5 (Lot # TB0901240) @ 25%

Factor
CREATED WITH SIMILAR PROCEDURE, EXCEPT QUANTITIES DOUBLED FOR RATE OF ADDITION.

Factor
Visc. Reading: $3.0 \times 100 = 300$ cps

③ METHOCCEL K100LVCR (Lot # TJ2012N31) @ 2.5%

CREATED WITH SIMILAR PROCEDURE TO *2

Visc. Reading: $7.6 \times 100 = 760$ cps

④ METHOCCEL K100LVCR (Lot # TJ2012N31) @ 10%

CREATED WITH SAME PROCEDURE

Viscosity Reading: ERROR :: Visc > 10,000 cps

⑤ METHOCCEL K100MCR (Lot # UD11012N32) @ 2.5%

CREATED WITH SAME PROCEDURE

Viscosity Reading: ERROR :: Visc > 10,000 cps

⑥ METHOCCEL K100MCR (Lot # UD11012N32) @ 10%

COULD NOT BE PRODUCED.

To Page No. _____

Recorded by:

John J. [Signature]

Date

02/13/07

Verified by:

ajt

Date

24
02/07

From Page No. N/A

REPORT No: PPD-07-07P VERSION: 00

PURPOSE: TO DETERMINE IF THE CURRENT PUMP CLEANING PROCEDURE PROVIDED TO THE CONSUMER WITH COMMERCIAL AZELASTIN IS SUITABLE FOR FORMULATION # 03-33.

PACKAGING: BATCH 03-33-03c, 30 mL-FILL HDPE V-BOTTOM WITH VALOIS SPLIT RING PUMP. (34.5 mL, HDPE, CODE # G1834, LOT # 000002836).

EXPERIMENT: REMOVE DUST CAPS & CUPS FROM 20 BOTTLES OF AZELASTINE HCl SOLUTION 0.1% w/v, FORM. 03-33, BATCH 03-33-03c. IN A HOOD ACTIVATE EACH PUMP AT LEAST 6 TIMES OR UNTIL A FINE SPRAY APPEARS. LABEL HALF THE BOTTLES "UPRIGHT" AND THE OTHER HALF "PRONE". NUMBER EACH SET 1 THROUGH 10. STORE THE TEN BOTTLES UPRIGHT IN A 40°C/AMBIENT RH CHAMBER. STORE THE TEN BOTTLES PRONE IN THE SAME CHAMBER. AFTER 2 WEEKS STORAGE, REMOVE BOTTLES AND ATTEMPT TO ACTIVATE EACH.

OBSERVATIONS: ALL 20 SAMPLES PERFORMED IN SIMILAR FASHION. NOTHING NOTABLE OBSERVED DURING ^{THE} SPRAYING. ALL SAMPLES PERFORMED NORMALLY. INITIAL [Signature]

SAMPLES WERE RE-CAPPED, NECK-CLIPS WERE REPLACED, AND ALL SAMPLES WERE PLACED IN 40°C/AMBIENT STORAGE CHAMBER A9 IN ROOM #142.

THESE SAMPLES WILL BE RETRIEVED AFTER 2 WEEKS AND EACH WILL BE ACTIVATED (OR AT LEAST ATTEMPTED). IF THE PUMPS WILL NOT ACTIVATE, THE PATIENT INSTRUCTIONS FROM THE COMMERCIAL PRODUCT WILL BE FOLLOWED.

To Page No. 158

Recorded by:

John J. [Signature]

Date

03/05/07

Verified by:

C. [Signature]

Date

3/26/07