Culliver, Sherrill

From: Bruno A. Ferraro [bruno@grovescientific.com]
Sent: Thursday, April 02, 2009 4:41 PM
To: Satyal, Ajaya; Culliver, Sherrill
Cc: 'Sara Greivell'; 'Polly Mandrell'; Jim Gorsuch
Subject: E-Stone USA
Attachments: EStone test corrections April 09.pdf

Hi AJ and Sherrill

Attached are the corrections to the E-Stone test report using the correct run time. I discussed each of the items with Sherrill this afternoon to make sure he was clear on my explanations. Let me know if you have any additional questions with my response. I have attached the corrected Section 5.0 with the revised calculations. I have mailed you an original.

Sara is working on the RAI from Susan on the application.

Thanks

From the Desk of;

Bruno A. Ferraro, CEP, QEP
President
Grove Scientific & Engineering Company
6140 Edgewater Drive, Suite F
Orlando, Florida 32810
Phone 407-298-2282
Cell 407-257-3095
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April 3, 2009

GROVE
SCIENTIFIC & ENGINEERING

Mr. Ajaya K. Satyal
District Air Program Administrator
Florida Department of Environmental Protection
South District Office
P.O. Box 2549
Ft. Myers, Florida 33902-2549

RE: Request for Additional Information on Compliance Test
E-Stone USA Corporation
File No. 0550049-004-AV

Dear Mr. Satyal;

We are in receipt of the above request, discussed each of the following issues with Sherrill Culliver and have addressed them below. The incorrect run time was calculated in the stack test report causing the other calculation to be incorrect.

Item 1

The correct length of production time for the calculations should have been 352 minutes as pointed out by Mr. Culliver's review of the test report. This has been corrected in the report and a revised "Section 5.0" is attached. All of the calculation affected by the run-time have been revised.

Item 2

The polyester resin usage is correct in the original report as I discussed with Mr. Culliver. The counter did not start at 21.667 lbs. This is the amount of resin it took to make the first slab. The second page of the raw data sheets in Appendix E of the report, shows it took 1674.901 pounds of polyester resin to make 78 slabs. The was the overall production rate in the 352 minutes.

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Item 3

Tinuvin is a catalyst that comes in powder form. There are no HAP in Tinuvin. Styrene (4.68 pounds) is used to dissolve the Tinuvin into a solution so that it can be added to the overall resin recipe. To correctly account for this styrene, it is added to the resin amount in section 5.3 of the report. The final emission rate is expressed as pounds of organic HAP per ton of neat resin. Neat resin is the polyester with the HAP (in this case styrene).

Should you have any additional questions regarding this letter, please call or email bruno@grovescientific.com.

Sincerely,
GROVE SCIENTIFIC & ENGINEERING COMPANY

Bruno A. Ferraro, CEP, QEP
President

cc: Polly Mandrell

SECTION 5.0
PRODUCTION DATA AND MASS ORGANIC HAP EMISSION RESULTS

5.1 Production Monitoring System

The robotic manufacturing process at E-Stone is computer controlled and monitored. The operator can select any time sequence and obtain real-time raw material consumption rate and production rate. The computer generated report and the AOC Resins MSDS are included in Attachment E.

The report includes the time between 09:12:25 hours to 15:04:52 hours for a total of 352 minutes during which 78 slabs were produced. This equates to 13.3 slabs/hr of production. A total of 1674.901 lbs of AOC polyester resin was used in 352 minutes or 280.89 lbs/hr. The resin is a 50/50 mixture of two AOC resins; A520-PKC-00 which is 35% styrene and A520-PKE-00 which is 35% styrene. A small amount of styrene (4.68 pounds) is added to the batch as a diluent for the micro-additive Tinuvin. A summary of the raw material usage is presented below in Table 5-1.

Table 5-1: Summary of Raw Material Usage

Raw Material	Total Pounds used in 78 Slabs	Usage Rate (lbs/hr)
Limestone Rock (backing)	5850.000	997.159
Decorative Aggregate	9069.984	1546.020
Catalyst (Norox 90 cc)	16.741	2.854
Styrene	4.68	0.798
Polyester Resin	1674.901	285.495

5.2 Emission Summary

The stack test report is included in its entirety in Attachment F. Three locations were tested for styrene using EPA Method 25A applying a measured response factor to styrene, the only organic HAP. The three locations tested were the inlet and outlet of the RTO and the dust collector outlet (DC3). The mass emissions are based on the combined emission rate of the RTO outlet and the DC3 outlet. The inlet of the RTO was measured to determine overall RTO destruction efficiency for in-house purposes only. The results of the destruction efficiency are summarized below in Table 5-2.

Table 5-2: Summary of RTO Destruction Efficiency

Run No.	RTO Inlet (lbs/hr as styrene)	RTO Outlet (lbs/hr as styrene)	Destruction Efficiency (%)
1	7.48	0.06	99.17
2	7.74	0.06	99.21
3	7.22	0.09	98.76
Average	**7.48**	**0.07**	**99.04**

The results of the mass styrene (HAP) emissions are presented below in Table 5-3.

Table 5-3: Summary of Mass Styrene (HAP) Emissions

Run No.	RTO Outlet (lbs/hr as styrene)	DC3 Outlet (lbs/hr as styrene)	Total Organic HAP Mass Emission Rate (lbs/hr as styrene)
1	0.06	5.39	5.45
2	0.06	6.60	6.66
3	0.09	6.12	6.21
Average	**0.07**	**6.03**	**6.10**

5.3 Compliance with HAP Emission Limit

In accordance with Specific Condition B.12 of the referenced construction permit, this open molding - non-CR/HS polymerization process is required to meet the organic HAP emission limit referenced in 40 Part 63 Subpart WWWW Table 3, item 2, of 88 pounds of organic HAP per ton of resin. As presented in Table 5-1, the hourly resin usage during the test was 285.495 lbs plus 0.798 lbs of additional styrene (used to mix Tinuvin into solution) equals 286.29 lbs/hr or 0.1431 tons/hr. Styrene is the only organic HAP in this product.

The emission limit is calculated as follows:

(6.10 lbs organic HAP) / (0.1430 tons of resin) = 42.66 lbs organic HAP/ton of neat resin.