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GAS-PHASE AIR CLEANER TEST REPORT

Manufacturer:	Air Cleaner Manufacturer
Product Name:	Gas-phase Air Cleaner
Challenge:	Toluene, 50 ppm
RTI Report No.	BR01010801

**Test Laboratory:
RTI
3040 Cornwallis Road
Research Triangle Park, NC 27709
919-541-6941
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Gas-Phase Air Cleaner Performance Report Summary

This report applies to the tested device only.

Laboratory Data

RTI Report No.	<u>BR01010801</u>	Date	<u>18-Apr-08</u>
Test Laboratory	<u>Research Triangle Institute</u>		
Operator	<u>Pope</u>	Supervisor	<u>Owen</u>
Analyzers:	Brand <u>RAE</u>	Model	<u>miniRAE</u>

Device Manufacturer's Data

Manufacturer	<u>Air Cleaner Manufacturer</u>		
Product Name	<u>Gas-phase Air Cleaner</u>		
Product Model	<u></u>		
Test requested by	<u>Air Cleaner Manufacturer</u>		
Sample obtained from	<u>Air Cleaner Manufacturer</u>		
Catalog rating:	Airflow rate <u>NA</u>	Initial dP (in. wg)	<u>0.5</u>
Specified test conditions:	Airflow (cfm) <u>1200</u>	Final dP (in. wg)	<u>NA</u>
	Face Velocity (fpm) <u>300</u>		

Device Description

Nominal Dimensions (in.):	<u>24 x 24 x 12</u> (height x width x depth)		
Generic name	<u>carbon bed</u>	Media color	<u>black</u>
Amount and type of media	<u>10 lb of 4x8 mesh carbon</u>		
Other attributes	<u>media bed in standard housing.</u>		

Test Conditions

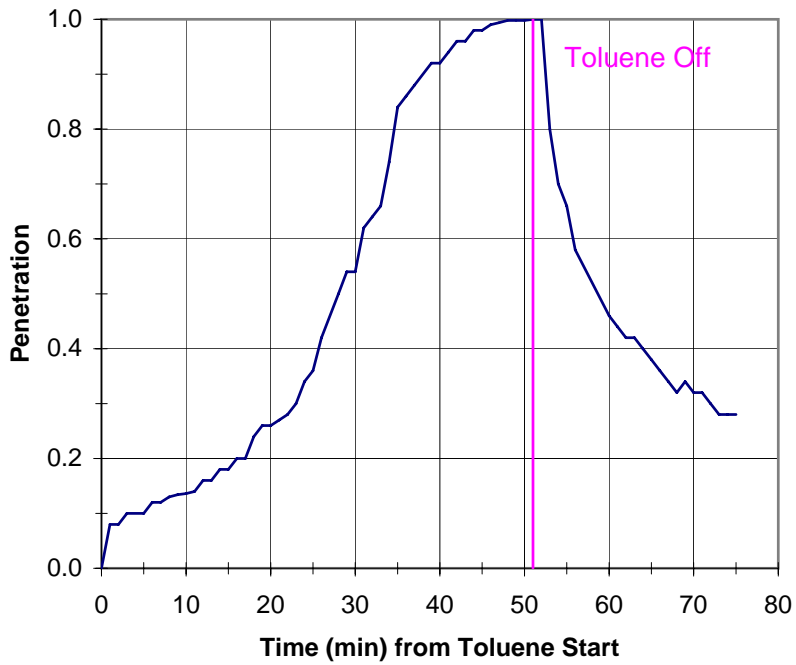
Airflow (cfm)	<u>1200</u>	Temperature (F)	<u>75</u>	RH (%)	<u>45</u>
Face Velocity (fpm)	<u>300</u>	Final Pressure Drop (in. wg)	<u>NA</u>		
Challenge Gas	<u>Toluene</u>	@	<u>50</u>	ppm	
Remarks	<u>Toluene at approximately 50 ppm upstream concentration was injected into a distribution manifold into our ASHRAE 52.2 test rig. Upstream and downstream concentrations were measured and compared to give penetration values.</u>				

Breathrough Test Results

Initial Breakthrough	<u>10</u>	% at approx. Time = 5 minutes after Toluene turned on
5% Breakthrough (BT) reached at	<u>NA</u>	min.
50% Breakthrough (BT) reached at	<u>28</u>	min.
90% Breakthrough	<u>38</u>	min.

Toluene Test at 50 ppm

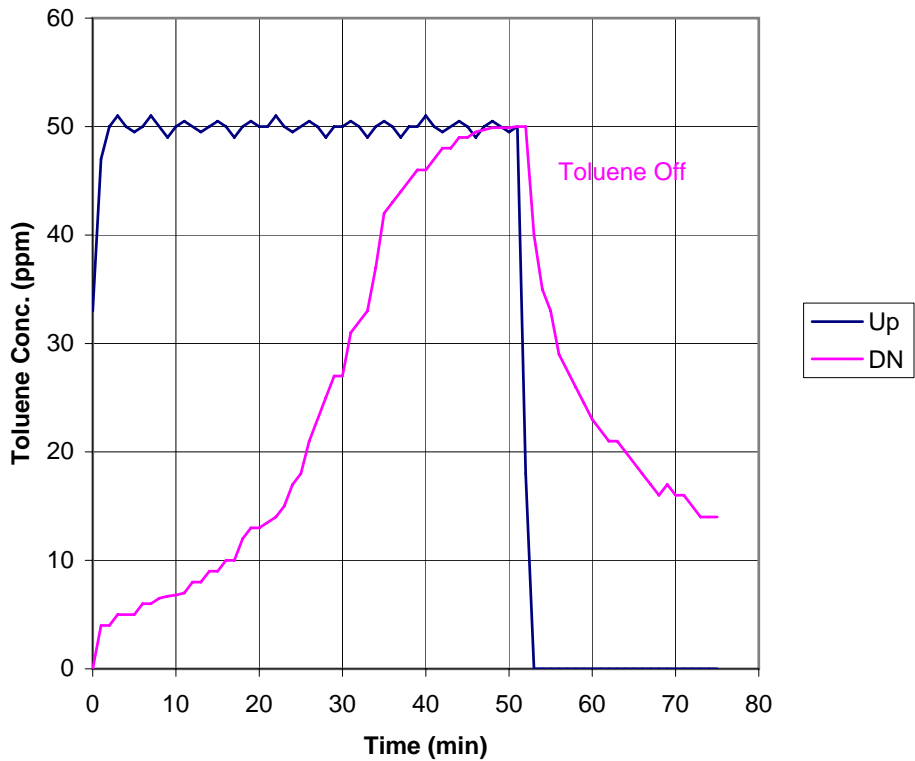
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Penetration values after Toluene is turned off are based on the average upstream value during the challenge.

Toluene Test at 50 ppm

1/01/08



TABULATED DATA SUMMARY

Test No. BR01010801

Summary of Test Conditions:

Product Manufacturer	Air Cleaner Manufacturer
Product Name	Gas-phase Air Cleaner
Nominal Dimensions (in)	24 x 24 x 12
Airflow (cfm)	1200
Resistance (in H ₂ O)	0.50
Contaminant	Toluene
Upstream Concentration	50 ppm average
Rig Backgrounds	< 1 ppm

Time (min)	Downstream (ppm)	Penetration	Efficiency (%)	Time (min)	Downstream (ppm)	Penetration	Efficiency*
0	0	0.0	100	52	50	1	0
1	4	0.1	92	53	40	1	20
2	4	0.1	92	54	35	1	30
3	5	0.1	90	55	33	1	34
4	5	0.1	90	56	29	1	42
5	5	0.1	90	57	28	1	45
6	6	0.1	88	58	26	1	48
7	6	0.1	88	59	25	0	51
8	7	0.1	87	60	23	0	54
9	7	0.1	87	61	22	0	56
10	7	0.1	86	62	21	0	58
11	7	0.1	86	63	21	0	58
12	8	0.2	84	64	20	0	60
13	8	0.2	84	65	19	0	62
14	9	0.2	82	66	18	0	64
15	9	0.2	82	67	17	0	66
16	10	0.2	80	68	16	0	68
17	10	0.2	80	69	17	0	66
18	12	0.2	76	70	16	0	68
19	13	0.3	74	71	16	0	68
20	13	0.3	74	72	15	0	70
21	14	0.3	73	73	14	0	72
22	14	0.3	72	74	14	0	72
23	15	0.3	70	75	14	0	72
24	17	0.3	66				
25	18	0.4	64				
26	21	0.4	58				
27	23	0.5	54				
28	25	0.5	50				
29	27	0.5	46				
30	27	0.5	46				
31	31	0.6	38				
32	32	0.6	36				
33	33	0.7	34				
34	37	0.7	26				
35	42	0.8	16				
36	43	0.9	14				
37	44	0.9	12				
38	45	0.9	10				
39	46	0.9	8				
40	46	0.9	8				
41	47	0.9	6				
42	48	1.0	4				
43	48	1.0	4				
44	49	1.0	2				
45	49	1.0	2				
46	50	1.0	1				
47	50	1.0	1				
48	50	1.0	0				
49	50	1.0	0				
50	50	1.0	0				
51	50	1.0	0				toluene off

*Efficiency values after Toluene is turned off are based on the average upstream value during the challenge.