

Table 1 - Annual Respondent Burden and Cost of Recordkeeping and Reporting Requirements of the MACT Floor for Existing Major Sources: Polyvinyl Chloride and Copolymer Manufacturing Units

Burden Item	(A) Respondent Hours per Occurrence (Technical Hours)	(B) Number of Occurrences Per Respondent Per Year	(C) Hours Per Respondent Per Year (C=A x B)	(D) Number of Respondents Per Year ^a	(E) Technical Hours Per Year (D x E)	(F) Management Hours Per Year (F x 0.05)	(G) Clerical Hours Per Year (F x 0.1)	(H) Total Labor Costs Per Year ^b
1. Applications	N/A							
2. Surveys and Studies	N/A							
3. Reporting Requirements								
A. Familiarization with Regulatory Requirements ^{c,d}	320	1	320	15	4,800	240	480	\$628,762
B. Required Activities								
1) Initial performance test, sampling, and report								
a) Process Vents ^{e,f}	120	1	120	0	0	0	0	\$0
b) Resins ^g	36	1	36	0	0	0	0	\$0
c) wastewater ^h	8	1	8	0	0	0	0	\$0
d) uncontrolled wastewater ^h	40	1	40	0	0	0	0	\$0
e) heat exchangers ⁱ	8	1	8	0	0	0	0	\$0
f) equipment leaks ^j	850	1	850	0	0	0	0	\$0
2) Periodic performance test, sampling, and report								
a) Process Vents ^f	17.1	350	5985	13	77,805	3,890	7,781	\$10,191,832.56
b) Resins ^g	36	350	12600	15	189,000	9,450	18,900	\$24,757,488
c) wastewater ^h	8	12	96	14	1,344	67	134	\$176,053.25
d) uncontrolled wastewater ^h	40	1	40	15	600	30	60	\$78,595.20
e) heat exchangers ⁱ	8	12	96	14	1,344	67	134	\$176,053.25
f) equipment leaks ^j	43	12	516	15	7,740	387	774	\$1,013,878.08
3) Establish operating parameters and monitoring plan								
a) Process Vents ^{e,f,g}	8	1	8	0	0	0	0	\$0
4) Continuous parameter monitoring								
a) Initial capital costs (PRD Electronic Monitor) ^{k,l}	524	1	524	0	0	0	0	\$0
b) Annualized capital and O&M costs (PRD Electronic Monitor) ^k	24	1	24	5	120	6.00	12.00	\$15,719.04
5) Other requirements								
a) equipment openings, initial measurement ^{e,o}	1.5	1	1.5	0	0	0	0	\$0
b) equipment openings, daily measurement ^o	1.5	350	525	15	7,875	393.75	787.5	\$1,031,562
c) gasholders ^{e,o}	24	1	24	0	0	0	0	\$0
d) storage vessels ^{e,n}	40	1	40	0	0	0	0	\$0
e) bypasses, initial requirement ^{o,r}	40	1	40	0	0	0	0	\$0
f) bypasses, ongoing inspection ^r	1	12	12	15	180	9	18	\$23,578.56
C. Create Information	Incl. in 3.B							
D. Gather Information	Incl. in 3.E							
E. Report Preparation								
1) Initial Notification ^{e,s}	5	1	5	0	0	0	0	\$0
2) Batch precompliance report ^{e,s}	5	1	5	0	0	0	0	\$0
3) Notification of performance test with test plan ^{e,s}	10	1	10	0	0	0	0	\$0
4) Notification of compliance status ^{e,s}	20	1	20	0	0	0	0	\$0
5) Compliance report ^{e,s}	40	2	80	15	1,200	60	120	\$157,190.40
6) Notice of inspection ^s	5	1	5	15	75	4	8	\$9,824.40
Subtotal for Reporting Requirements^u						335,895		\$38,260,536
4. Recordkeeping Requirements								
A. Familiarization with Regulatory Requirements	Incl. in 3.A							
B. Implement Activities	N/A							
C. Develop Record System	N/A							
D. Record Information								
1) Records of process vent requirements ^d	10	1	10	15	150	8	15	\$19,648.80
2) Records of resin stripper requirements ^d	15	1	15	15	225	11	23	\$29,473.20
3) Records wastewater requirements ^d	15	1	15	15	225	11	23	\$29,473.20
4) Records of storage vessel requirements ^d	10	1	10	15	150	8	15	\$19,648.80
5) Records of equipment leak requirements ^d	25	1	25	15	375	19	38	\$49,122.00
6) Records of heat exchanger requirements ^d	10	1	10	15	150	8	15	\$19,648.80
7) Records of other emission sources requirements ^d	10	1	10	15	150	8	15	\$19,648.80
E. Personnel Training	Incl. in 3.B							
F. Time for Audits	N/A							
Subtotal for Recordkeeping Requirements						1,639		187,000
TOTAL LABOR BURDEN AND COSTS (rounded)^v						338,000		38,400,000
TOTAL CAPITAL AND O&M COST (rounded)^w								7,060,000
GRAND TOTAL (rounded)^x								45,500,000

<-- updated to total # of respondents

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45
7,511 per resp

FOOTNOTES

- ^a Assumes that, over the next three years, approximately 15 respondents per year will be subject to the standard, and no additional respondents per year will become subject to the standard.
- ^b Labor rates are \$147.40 for managerial, \$117.92 for technical, and \$57.02 for clerical. These rates from the United States Department of Labor, Bureau of Labor Statistics, September June 2018, "Table 2. Civilian Workers, by occupational and industry group." The rates are from column 1, "Total compensation." The rates have been increased by 110 percent to account for the benefit packages available to those employed by private industry.
- ^c One-time only costs.
- ^d Cost incurred by a facility regardless of the number of affected units at the plant.
- ^e There are 15 major sources in the affected source category.
- ^f 15 major sources are expected to perform testing for process vents. OxyVinyls Pedricktown does not operate a process vent control, but rather sends process vent gas streams to Mexichem Pedricktown for control. Like wise, the Wacker Calvert City facility does not operate a process vent control device, but rather sends process vent gas streams to the Westlake Calvert City facility for control. Per VI, it is assumed that performance testing for process vents will take 120 hours per occurrence initially. The initial compliance and operating procedure development for continuous compliance and will take 8 hours. The daily monitoring of parameters will take 5 min per record with 112 records a day across 33 devices in the industry. There are 3 area source and 15 major source subject to this requirement. Therefore, the continuous/daily monitoring will take on avg 17.1 hr per facility per day over 350 day/yr.
- ^g Per VI, it is assumed that performance testing for process vents will take 4 hours per sample for 9 samples per facility, initially and daily (350 days per year). See continuous monthly sampling & testing of Non-VC TOHAP in O&M section.
- ^h Per VI, wastewater testing is estimated to take 4 hours per sample for 2 samples per facility. There are 16 wastewater streams for 17 major sources, yields 16/17 wastewater streams per major source that are sampled monthly. There are 5 uncontrolled wastewater streams per source that are sampled annually. See Capital/O&M costs for non-VC TOHAP samples.
- ⁱ Per VI, it is assumed that performance testing on heat exchangers will take 4 hours per sample for 2 samples per facility, initially and monthly, for 16 of the 17 major sources. One of the sources relies on another facility to cool the water.
- ^j For Equipment leaks, VI estimates approx 10,000 components per facility and 5 minutes per component, plus additional time calibration of analytical device for a total of 850 hr per facility. For continuous monitoring, VI assumes 1 hr is required per component for leak repair, if detected. It was assumed that overall continuous compliance of leak monitoring will take 5% of the time with initial monitoring per month.
- ^k Per VI, the initial performance testing for pressure relief devices (PRD), would take 524 hours per facility. Periodically, corrective action for discharge from a PRD would take 24 hours. It is estimated that 27% of the respondents would experience discharge from a PRD each year.
- ^l Per VI, Estimated that semi annual compliance reports would take 40 technical hours twice per year.
- ^m Reporting subtotal does not include capital costs for PRD monitoring system.

Burden Item	(A)	(B)	(C)	(D)	(E) Technical person-hours per year (E=CxD)	(F) Management person-hours per year (Ex0.05)	(G) Clerical person-hours per year (Ex0.10)	
	EPA person-hours per occurrence	No. of occurrences per plant per year	EPA person-hours per plant per year (C=AxB)	Plants Per Year ^a				
1. Applications	not applicable							
2. Familiarization with Rule Requirements	15	1	15	0	0	0	0	
3. Required Activities								
A. Observe initial performance tests ^c	48	1	48	0	0	0	0	
B. Excess emissions -- Enforcement Activities ^d	24	1	24	1.5	36	2	4	
C. Create Information	not applicable							
D. Gather Information	not applicable							
E. Report Reviews								
1) Review initial notification	3	1	3	0	0	0	0	
2) Review batch precompliance report	5	1	5	0	0	0	0	
3) Review notification of performance test	10	1	10	0	0	0	0	
4) Review notification of compliance status	40	1	40	0	0	0	0	
5) Review compliance report	20	2	40	15	600	30	60	
6) Review notice of inspection	3	1	3	15	45	2	5	
F. Prepare annual summary report ^e	4	1	4	8	32	2	3	
4. Travel expenses: (1 person * 30 hours per year / 8 hours per day * \$75 per diem) + (\$600 per round trip) =						n/a	per trip	
TOTAL ANNUAL BURDEN AND COST (rounded)^f					820			

2018:

48.75

65.71

26.38

FOOTNOTES

^a Assumes that, over the next three years, approximately 15 respondents per year will be subject to the standard, and no additional

^b Labor rates are \$65.71 for managerial (GS-13, Step 5, \$41.07 + 60%), \$48.75 for technical (GS-12, Step 1, \$30.47 + 60%), and \$26.38 for clerical (GS-6, Step 3, \$16.49 + 60%). These rates from the Office of Personnel Management (OPM), 2018 General Schedule, which excludes locality rates of pay. The rates have been increased by 60 percent to account for the benefit packages available to government employees.

^c Assumes EPA personnel attend 20 percent of the initial process vent stack tests.

^d Assume 10% of major source facilities (15) have emission exceedances.

^e Using four hours per state (8 states) to write annual summary report.

Record Keeping and Reporting Burden by Emission Point

Note: This table is used to calculate the record keeping and reporting burden by emission point for the PVC NESHAP. The costs presented in the table below represent costs not otherwise included in the PVC NESHAP Impact estimate (i.e., testing and monitoring costs are already included in the PVC NESHAP impacts estimate, therefore, they are not included in the table below). The costs presented in the table below should be added to the previously calculated PVC Impacts to obtain an impacts estimate which includes record keeping and reporting.

Record Keeping and Reporting Burden By Emission Point						
Emission Point	Initial Cost (\$)	Initial Notes	Annual Cost (\$/yr)			Annual Notes
			Yr 1	Yr 2	Yr 3	
Resins	#REF!	a,b,d	#REF!	#REF!	\$24,810,820.46	e,f,g
Process Vents	#REF!	a,b,c,d	#REF!	#REF!	\$10,235,340.62	e,f,g
Wastewater	#REF!	a,b,d	#REF!	#REF!	\$307,980.91	e,f,g
Equipment Leaks	#REF!	a,b,d	#REF!	#REF!	\$1,102,578.38	e,f,g,h
Storage Vessels	#REF!	a,d	#REF!	#REF!	\$43,508.06	e,f,g
Heat Exchange Systems	#REF!	a,b,d	#REF!	#REF!	\$219,561.31	e,f,g
Other Sources	#REF!	a,d	#REF!	#REF!	\$43,508.06	e,f,g
Total	#REF!		#REF!	#REF!	\$36,763,297.78	

- a Labor/Non Labor Costs to "Read/Understand Rule Requirements" divided by 7 emission points
- b Initial Performance Test/Sampling/Report
- c Establishment of operating parameters and monitoring plan
- d Report preparation for item 3.E.1-6 divided by 7 emission points
- e Periodic sampling/testing/and monitoring (not applicable for process vents in year 1)
- f Years 2 and 3 include items 3.E.5 and 3.E.6 divided by 7 emission points
- g In year 2 and 3, recordkeeping items under 4.D are included
- h includes annual labor cost for PRD monitoring system

Equipment Leaks BTF Costs Calculation on a Facility Basis

Equipment Leaks	#REF!	#REF!	#REF!	\$83,903.97	Facilities going from V to UU
Equipment Leaks	#REF!	#REF!	#REF!	\$5,913.35	MACT
Equipment Leaks	#REF!	#REF!	#REF!	\$77,991	Incremental BTF Costs for Facilities going from V to UU

2. Required activities			
a. Perf. spec. tests (certif.) for CMS	11	1	11

Notes:

2. Person-hours per occurrence for CMS performance specification costs are based on the performance specification costs to certify CMS (\$700) divided by the composite hourly labor rate (\$66.41/hr).

Sources:

1. Bureau of Labor Statistics, Occupational Employment Statistics, May 2008 National Industry-Specific Occupational Employment and Wage Estimates.
2. Hospital/Medical/Infectious Waste Incinerators (HMIWI) [EPA-HQ-OAR2006-0534] Testing and Monitoring Options and Costs Memo (IV-B-66).

	(A) Continuous Monitoring Device	(B) Capital/Startup Cost for One Respondent
	PRD Electronic Monitor ⁸	\$375,000
6	VC Ambient monitoring ⁹	
	Gas holders	\$5,000
	Process Vent Testing ¹⁰	\$51,198
	Resin Sampling and Monitoring ¹	\$1,803
	Stripped resin: Non-VC TOHAP testing ²	\$1,950
	Wastewater Testing ³	\$491
	Wastewater: Non-VC TOHAP testing ⁴	\$650
	Uncontrolled Wastewater testing ⁵	\$0
	Uncontrolled wastewater: Non-VC TOHAP testing ⁶	\$3,250
	Equipment Leak Testing	\$77,798

¹Monthly testing (\$601 x 12 months = \$7,212 per year)

²Per VI's comments, the costs of Non-VC TOHAP testing is \$650 per sample, and 3 resin sam

³Monthly testing (\$491 x 12 months = \$5,892 per year)

⁴Per VI's comments, the costs of Non-VC TOHAP testing is \$650 per sample, and one sample

⁵Per VI's comments, there are 5 uncontrolled wastewater streams per source sampled annually

⁶Per VI's comments, the costs of Non-VC TOHAP testing is \$650 per sample, and five sample

⁷15 facilities are expected to be required to increase stringency of their LDAR programs to 40

⁸ Per VI's comments, the capital cost of the PRD monitor is \$15,000 per device, and it is assur

⁹ Per VI's comments, there are 71 GC monitors in the industry (3 area source and 15 major so

¹⁰ Per VI's comments, the cost to test one thermal oxidizer in 2018 was \$99,080 and there are

Capital/Startup vs. Operation and Maintenance

(C) Number of New Respondents	(D) Total Capital/Startup Cost, (B X C)
Continuous Parameter Monitoring	
0	\$0
0	\$0
Periodic Testing	
0	\$0
0	\$0
0	\$0
0	\$0
0	\$0
0	\$0
0	\$0
0	\$0
0	\$0
0	\$0
0	\$0
Total	
	\$0

1000 monitors per facility.

25 monitors per facility.

7.

25 monitors per facility.

10 CFR Part 63, Subpart UU.

Estimated that 25 devices per facility require indicators.

Estimated (with an annual O&M cost of \$45,000 per monitor.

Estimated 32 thermal oxidizers in operation at 15 major source facilities

(O&M) Costs

(E) Annual O&M Costs for One Respondent	(F) Number of Respondents with O&M
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\$26,897	15
\$164,250	15

\$99,080	32
\$7,212	15
\$23,400	15
\$5,892	15
\$7,800	15
\$491	75
\$3,250	15
\$18,205	15

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(G) Total O&M, (E X F)
\$403,455
\$2,463,750
\$3,170,560
\$108,180
\$351,000
\$88,380
\$117,000
\$36,825
\$48,750
\$273,075
\$7,060,000

<-- Updated costs and affected Tos.