Table VIII-2. Estimated Total Impacts to Businesses from Both Annualized Non-Recurring and Annual Recurring Costs

Code	Category	Estimated # Products Non-compliant	Number of Manufacturers/Marketers with Noncompliant Products in Each Product Category	Estimated Annual Costs, Dollars Per Year (Includes Recurring and Nonrecurring) For a Typical Business in the Product Category: Low cost	High Cost	Mid Cost	For All Businesses in the Product Category: Low Cost	High Cost	Mid Cost
	Automotive Care								
2208	Automotive Windshield Washer Fluids	58	30	$2,654	$34,027	$18,340	$79,622	$1,020,799	$550,211
2202	Automotive Brake Cleaners	82	26	$7,582	$58,757	$33,170	$197,132	$1,527,694	$862,413
2203	Carburetor, Choke Cleaners	79	28	$8,505	$54,627	$31,566	$238,135	$1,529,563	$883,849
2204a	Engine Degreasers (Aerosols)	41	35	$4,078	$23,086	$13,582	$142,714	$807,995	$475,354
2204b	Engine Degreasers (non-Aerosols)	13	7	$2,601	$33,350	$17,975	$18,209	$233,447	$125,828
2208	Tire Inflator and Sealant	11	9	$40,250	$59,817	$50,033	$362,246	$538,350	$450,298
	Total	283	135				$1,038,058	$5,657,847	$3,347,952
	Household Care								
1104	Construction, Panel, and Flooring Adhesives	54	18	$34,303	$86,828	$60,565	$617,445	$1,562,905	$1,090,175
5602	Double-Phase Aerosol Air Freshener	23	13	$67,457	$98,164	$82,810	$876,937	$1,276,131	$1,076,534
5405	Furniture Maintenance Products (Aerosols)	40	15	$12,396	$58,619	$35,508	$185,944	$879,281	$532,613
5202a	General Purpose Cleaners (Dilutables)	66	27	$4,755	$47,554	$26,155	$128,396	$1,283,957	$706,177
5202b	General Purpose Cleaners (Ready-to-Use)	73	28	$58,447	$104,219	$81,333	$1,636,503	$2,918,126	$2,277,314
5203a	General Purpose Degreasers (Dilutables)	60	30	$5,214	$52,136	$28,675	$156,409	$1,564,094	$860,251
5203b	General Purpose Degreasers (Ready-to-Use)	72	21	$8,670	$66,699	$36,684	$140,068	$1,400,681	$770,374
5203c	G.P. Degreaser/Solvent Parts Cleaner (Aerosol)	12	10	$8,666	$29,676	$19,171	$86,663	$296,765	$191,714
5204a	Glass Cleaners (Dilutables)	61	29	$4,105	$41,054	$22,580	$119,058	$1,190,579	$654,818
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	94	41	$4,441	$44,412	$24,427	$182,089	$1,820,885	$1,001,487
1201	Sealant and Caulking Compounds	122	21	$11,339	$113,388	$62,364	$238,116	$2,381,157	$1,309,637
	Total	697	253				$4,367,628	$16,574,561	$10,471,094
	Personal Care								
6402	Hair Mousses	118	27	$12,754	$69,756	$41,255	$344,350	$1,883,401	$1,113,878
6503	Nail Polish Remover	42	16	$4,178	$38,532	$21,355	$66,851	$616,512	$341,681
	Total	160	43				$411,201	$2,499,913	$1,455,557
	Pesticides								
4305	Crawling Bug Insecticides (Aerosols)	59	18	$40,431	$299,481	$169,956	$727,754	$5,390,663	$3,059,208
4302	Flying Insect Insecticide (Aerosols)	43	16	$27,785	$241,898	$134,842	$444,565	$3,870,376	$2,157,471
4304	Lawn and Garden Insecticides (Non-Aerosol)	22	6	$16,044	$161,078	$88,561	$96,265	$966,470	$531,367
	Total	124	40				$1,268,584	$10,227,508	$5,748,046
	Grand Total	1,264				TOTAL	$7,085,471	$34,959,830	$21,022,650

Notes: Number of Manufacturers/Marketers with noncompliant products taken from 1997 ARB Survey for all categories except for windshield washer fluid, which was estimated from Frost & Sullivan, "Automotive Functional Fluids Aftermarket Participants," 5/3/99

Table VIII-5. Estimated Total Annualized Non-Recurring Fixed Cost to Comply with Proposed Standards

Code	Category	Proposed Limit	Estimated # Products Non-compliant (A)	Estimated Total One-Time Cost to Reformulate Per Product (dollars) Low (B0)	High (B1)	Estimated Annualized Cost to Reformulate Per Product (dollars per year) Low (B2 = B0 x CRF)	High (B3 = B1 x CRF)	Estimated Annualized Fixed Cost to Reformulate All Non-Compliant Products (dollars per year) Low (A x B2)	High (A x B3)
	Automotive Care								
2208	Automotive Windshield Washer Fluids	1%	58	$8,476	$108,669	$1,379	$17,685	$79,622	$1,020,799
2202	Automotive Brake Cleaners	45%	82	$8,476	$108,669	$1,379	$17,685	$112,564	$1,443,126
2203	Carburetor, Choke Cleaners	45%	79	$8,476	$108,669	$1,379	$17,685	$109,253	$1,400,681
2204a	Engine Degreasers (Aerosols)	35%	41	$8,476	$108,669	$1,379	$17,685	$56,282	$721,563
2204b	Engine Degreasers (non-Aerosols)	5%	13	$8,476	$108,669	$1,379	$17,685	$18,209	$233,447
2206	Tire Inflator and Sealant	20%	11	$8,476	$108,669	$1,379	$17,685	$14,898	$191,002
		SUM =	283					$390,828	$5,010,617
	Household Care								
1104	Construction, Panel, and Flooring Adhesives	15%	54	$11,954	$119,536	$1,945	$19,454	$105,051	$1,050,511
5602	Double-Phase Aerosol Air Freshener	20%	23	$11,954	$119,536	$1,945	$19,454	$44,355	$443,549
5405	Furniture Maintenance Products (Aerosols)	17%	40	$11,954	$119,536	$1,945	$19,454	$77,037	$770,374
5202a	General Purpose Cleaners (Dilutables)	1%	66	$11,954	$119,536	$1,945	$19,454	$128,396	$1,283,957
5202b	General Purpose Cleaners (Ready-to-Use)	3%	73	$11,954	$119,536	$1,945	$19,454	$142,403	$1,424,025
5203a	General Purpose Degreasers (Dilutables)	1%	80	$11,954	$119,536	$1,945	$19,454	$156,409	$1,564,094
5203b	General Purpose Degreasers (Ready-to-Use)	3%	72	$11,954	$119,536	$1,945	$19,454	$140,068	$1,400,681
5203c	G P. Degreaser/Solvent Parts Cleaner (Aerosol)	50%	12	$11,954	$119,536	$1,945	$19,454	$23,345	$233,447
5204a	Glass Cleaners (Dilutables)	1%	61	$11,954	$119,536	$1,945	$19,454	$119,058	$1,190,579
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	4%	94	$11,954	$119,536	$1,945	$19,454	$182,089	$1,820,885
1201	Sealant and Caulking Compounds	4%	122	$11,954	$119,536	$1,945	$19,454	$238,116	$2,381,157
		SUM =	697					$1,356,326	$13,563,259
	Personal Care								
6402	Hair Mousses	6%	118	$9,780	$90,195	$1,592	$14,679	$187,182	$1,726,233
6503	Nail Polish Remover	0%	42	$9,780	$90,195	$1,592	$14,679	$66,851	$616,512
		SUM =	160					$254,033	$2,342,745
	Pesticides								
4305	Crawling Bug Insecticides (Aerosols)	15.00%	59	$62,593	$549,865	$10,187	$89,488	$598,982	$5,261,891
4302	Flying Insect Insecticide (Aerosols)	25.00%	43	$62,593	$549,865	$10,187	$89,488	$440,068	$3,865,879
4304	Lawn and Garden Insecticides (Non-Aerosol)	3.00%	22	$27,385	$274,932	$4,457	$44,744	$96,265	$966,470
		SUM =	124					$1,135,315	$10,094,240

1999 Chemical Engineering Plant Cost Index =	388.6 (Prelim 4/99)	Market Adjustment =	1.2
1991 Chemical Engineering Plant Cost Index =	357.6 (Final 1991)	(used to estimate total number of non-comp products in CA)	
		Discount Rate	10.00%
		Project Horizon, yrs	10
		Cost Recovery Factor	0.16275 (CRF)

Grand Annual Total (dollars per year)	$3,136,502	$31,010,861

Notes: # Noncompliant Products = Market Adj. x (# Noncompliant Products in Survey) with windshield washer fluid market adj. of 2.22 and all others 1.2

Table VIII-6. Estimated Cost-Effectiveness for Proposed Standards

Code	Category	Typical Non-compliant VOC Content (A)	Proposed Limit (B)	Estimated # Products Non-compliant (C)	1997 Emission Reduc. tons/day (D)	Estimated Reformulation Costs (in 1998 dollars) Annualized Non-Recurring Cost $/lb VOC Reduced Low (E1)	Annualized Non-Recurring Cost $/lb VOC Reduced High (E2)	Annual Recurring Cost $/lb VOC Reduced Low (F1)	Annual Recurring Cost $/lb VOC Reduced High (F2)	Estimated Cost-Effectiveness $/lb VOC reduced (in 1998 dollars) Low G1=(E1+F1)	High G2=(E2+F2)	Avg * (G1+G2)/2
	Automotive Care											
2208	Automotive Windshield Washer Fluids	5%	1%	58	7.420	$0.00	$0.02	($0.04)	($0.04)	($0.04)	($0.02)	$0.00
2202	Automotive Brake Cleaners	50%	45%	82	0.310	$0.06	$0.83	$0.37	$0.37	$0.44	$1.20	$0.82
2203	Carburetor, Choke Cleaners	75%	45%	79	2.190	$0.01	$0.11	$0.08	$0.08	$0.09	$0.19	$0.14
2204a	Engine Degreasers (Aerosols)	50%	35%	41	0.370	$0.03	$0.35	$0.32	$0.32	$0.35	$0.67	$0.51
2204b	Engine Degreasers (non-Aerosols)	40%	5%	13	0.050	$0.06	$0.83	($0.56)	($0.56)	($0.49)	$0.27	$0.00
2206	Tire Inflator and Sealant	35%	20%	11	0.320	$0.01	$0.11	$1.49	$1.49	$1.50	$1.59	$1.54
			Σ	283	10.660						ERWA-AVG	$0.12
	Household Care											
1104	Construction, Panel, and Flooring Adhesives	27%	15%	54	0.440	$0.04	$0.43	$1.60	$1.60	$1.64	$2.02	$1.83
5602	Double-Phase Aerosol Air Freshener	30%	20%	23	1.540	$0.01	$0.05	$0.74	$0.74	$0.75	$0.79	$0.77
5405	Furniture Maintenance Products (Aerosols)	25%	17%	40	0.350	$0.04	$0.39	$0.43	$0.43	$0.47	$0.82	$0.64
5202a	General Purpose Cleaners (Dilutables)	3%	1%	66	0.410	$0.06	$0.56	($3.25)	($4.47)	($3.19)	($3.92)	$0.00
5202b	General Purpose Cleaners (Ready-to-Use)	5%	3%	73	1.050	$0.02	$0.24	$1.95	$2.92	$1.97	$3.17	$2.57
5203a	General Purpose Degreasers (Dilutables)	5%	1%	80	0.410	$0.07	$0.68	($1.25)	($2.00)	($1.18)	($1.32)	$0.00
5203b	General Purpose Degreasers (Ready-to-Use)	22%	3%	72	0.850	$0.03	$0.29	($0.45)	($0.29)	($0.42)	($0.00)	$0.00
5203c	G.P. Degreaser/Solvent Parts Cleaner (Aerosol)	100%	50%	12	0.360	$0.01	$0.12	$0.24	$0.24	$0.25	$0.36	$0.30
5204a	Glass Cleaners (Dilutables)	4%	1%	61	0.820	$0.03	$0.26	($0.47)	($0.47)	($0.45)	($0.22)	$0.00
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	5%	4%	94	0.360	$0.09	$0.90	($0.60)	($0.60)	($0.51)	$0.30	$0.00
1201	Sealant and Caulking Compounds	35%	4%	122	0.790	$0.05	$0.54	($0.24)	($0.40)	($0.18)	$0.14	$0.00
			Σ	697	7.380						ERWA-AVG	$0.68
	Personal Care											
3402	Hair Mousses	15%	6%	118	0.330	$0.10	$0.93	$0.65	$1.62	$0.75	$2.56	$1.65
3503	Nail Polish Remover	35%	0%	42	0.470	$0.03	$0.23	($0.17)	($0.21)	($0.14)	$0.02	$0.00
			Σ	160	0.800						ERWA-AVG	$0.68
	Pesticides											
4305	Crawling Bug Insecticides (Aerosols)	20%	15%	59	0.490	$0.22	$1.91	$0.36	$0.36	$0.58	$2.27	$1.43
4302	Flying Insect Insecticide (Aerosols)	35%	25%	43	0.110	$0.71	$6.26	$0.06	$0.06	$0.77	$6.31	$3.54
4304	Lawn and Garden Insecticides (Non-Aerosol)	5%	3%	22	0.350	$0.05	$0.49	($0.21)	($0.21)	($0.16)	$0.28	$0.06
			Σ	124	0.950						ERWA-AVG	$1.17
			Grand Tot.	1,264	20						MIN G(1)	$0.00
											MAX G(2)	$6.31
											OVERALL -> ERWA-AVG	$0.40

Notes:

(1) * Avg Cost-Effectiveness shown as "$0.00" means the average of the low and high cost-effectiveness for the category was either 0 or negative.

(2) ERWA = emission reduction-weighted average

(3) Cost-effectiveness values in "( )" are negative (i.e., indicates potential cost savings)

(4) Non-recurring fixed costs annualized by multiplying with the Cost Recovery Factor (CRF)

(5) "# Products Non-Compliant" (Column C) and "Emission Reductions" (Column D) reflect 1997 Mid-Term Survey results adjusted for market coverage of the survey.

(6) For non-recurring costs, "low" and "high" refer to range of estimated fixed costs as shown in Section VIII; for recurring costs, "low" and "high" refer to "All Other" ingredients assumed to cost $3.50/lb and $7.00/lb, respectively (in 1998 dollars), unless otherwise noted in individual category cost spreadsheets

California-to-National Cost Adjustment Factor = 0.13

Table VIII-8. Estimated Impacts to Raw Materials Cost Per Unit

Code	Category	Estimated Raw Material Costs, $/Unit of Product				Cost Difference from Baseline Pre-Reg	
		Baseline Pre-Regulatory		Compliant		to Low	to High
		Low (A0)	High (B0)	Low (A1)	High (B1)	(A1)-(A0)	(B1)-(B0)
	Automotive Care						
2208	Automotive Windshield Washer Fluids	$0.11	$0.11	$0.10	$0.10	$0.00	$0.00
2202	Automotive Brake Cleaners	$0.20	$0.20	$0.21	$0.21	$0.02	$0.02
2203	Carburetor, Choke Cleaners	$0.19	$0.19	$0.21	$0.21	$0.02	$0.02
2204a	Engine Degreasers (Aerosols)	$0.34	$0.34	$0.38	$0.38	$0.04	$0.04
2204b	Engine Degreasers (non-Aerosols)	$0.43	$0.43	$0.27	$0.27	$0.00	$0.00
2206	Tire Inflator and Sealant	$0.13	$0.13	$0.38	$0.38	$0.25	$0.25
	Household Care						
1104	Construction, Panel, and Flooring Adhesives	$0.46	$0.46	$0.61	$0.61	$0.16	$0.16
5602	Double-Phase Aerosol Air Freshener	$0.07	$0.09	$0.11	$0.13	$0.04	$0.04
5405	Furniture Maintenance Products (Aerosols)	$0.40	$0.40	$0.43	$0.43	$0.03	$0.03
5202a	General Purpose Cleaners (Dilutables)	$0.17	$0.07	$0.06	$0.02	$0.00	$0.00
5202b	General Purpose Cleaners (Ready-to-Use)	$0.07	$0.09	$0.10	$0.12	$0.03	$0.04
5203a	General Purpose Degreasers (Dilutables)	$0.13	$0.18	$0.06	$0.07	$0.00	$0.00
5203b	General Purpose Degreasers (Ready-to-Use)	$0.23	$0.28	$0.16	$0.24	$0.00	$0.00
5203c	G.P. Degreaser/Solvent Parts Cleaner (Aerosol)	$0.32	$0.32	$0.43	$0.43	$0.11	$0.11
5204a	Glass Cleaners (Dilutables)	$0.02	$0.02	$0.01	$0.01	$0.00	$0.00
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	$0.05	$0.05	$0.04	$0.04	$0.00	$0.00
1201	Sealant and Caulking Compounds	$0.24	$0.38	$0.18	$0.28	$0.00	$0.00
	Personal Care						
6402	Hair Mousses	$0.14	$0.27	$0.17	$0.34	$0.03	$0.07
6503	Nail Polish Remover	$0.17	$0.20	$0.13	$0.14	$0.00	$0.00
	Pesticides						
4305	Crawling Bug Insecticides (Aerosols)	$0.15	$0.23	$0.17	$0.25	$0.01	$0.01
4302	Flying Insect Insecticide (Aerosols)	$0.18	$0.26	$0.19	$0.27	$0.00	$0.00
4304	Lawn and Garden Insecticides (Non-Aerosol)	$0.12	$0.20	$0.11	$0.20	$0.00	$0.00
						MIN INCREASE	$0.00
						MAX INCREASE	$0.25

Table VIII-10. Estimated Per-Unit Cost Increases from Both Annualized Non-Recurring and Annual Recurring Costs

Code	Category	Sales-Wtd Average VOC Content, % (A)	Estimated VOC Emissions, tons/day (B)	Typical Unit Weight Ounces (C)	Estimated Unit Sales per Day in Calif. (D)	Estimated Per Unit Production Cost Increase: Annualized Nonrecurring Low Cost/Unit (E1)	Annualized Nonrecurring High Cost/Unit (E2)	Annual Recurring Low Cost/Unit (F1)	Annual Recurring High Cost/Unit (F2)	Total Increase Low/Unit G1=(E1+F1)	Total Increase High/Unit G2=(E2+F2)	Total Increase Mid/Unit (G1+G2)/2
	Automotive Care											
2208	Automotive Windshield Washer Fluids	5.0%	8.30	133	39,940	$0.00	$0.01	$0.00	$0.00	$0.00	$0.01	$0.00
2202	Automotive Brake Cleaners	42.0%	5.60	13	32,821	$0.00	$0.02	$0.02	$0.02	$0.02	$0.03	$0.02
2203	Carburetor, Choke Cleaners	67.0%	6.48	13	23,807	$0.00	$0.02	$0.02	$0.02	$0.02	$0.04	$0.03
2204a	Engine Degreasers (Aerosols)	34.0%	1.67	13	12,090	$0.00	$0.02	$0.04	$0.04	$0.04	$0.06	$0.05
2204b	Engine Degreasers (non-Aerosols)	1.0%	0.08	13	19,692	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2208	Tire Inflator and Sealant	21.0%	0.89	18	7,534	$0.00	$0.01	$0.25	$0.25	$0.25	$0.26	$0.26
	Household Care											
1104	Construction, Panel, and Flooring Adhesives	22.0%	1.00	13	11,189	$0.00	$0.03	$0.16	$0.16	$0.16	$0.19	$0.17
5602	Double-Phase Aerosol Air Freshener	30.0%	4.57	9	54,163	$0.00	$0.00	$0.04	$0.04	$0.04	$0.04	$0.04
5405	Furniture Maintenance Products (Aerosols)	20.0%	1.98	12.5	25,344	$0.00	$0.01	$0.03	$0.03	$0.03	$0.04	$0.03
5202a	General Purpose Cleaners (Dilutables)	5.8%	4.77	8.6	308,543	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
5202b	General Purpose Cleaners (Ready-to-Use)	2.0%	3.18	10.5	484,571	$0.00	$0.00	$0.03	$0.04	$0.03	$0.04	$0.03
5203a	General Purpose Degreasers (Dilutables)	6.2%	0.94	23	21,197	$0.00	$0.03	$0.00	$0.00	$0.00	$0.03	$0.01
5203b	General Purpose Degreasers (Ready-to-Use)	22.0%	0.95	12.3	11,234	$0.00	$0.04	$0.00	$0.00	$0.00	$0.04	$0.02
5203c	G.P. Degreaser/Solvent Parts Cleaner (Aerosol)	97.0%	0.73	15	1,605	$0.01	$0.05	$0.11	$0.11	$0.11	$0.16	$0.13
5204a	Glass Cleaners (Dilutables)	2.0%	1.21	17	113,882	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	5.0%	2.27	23	63,165	$0.00	$0.01	$0.00	$0.00	$0.00	$0.01	$0.01
1201	Sealant and Caulking Compounds	3.0%	1.87	13	153,436	$0.00	$0.01	$0.00	$0.00	$0.00	$0.01	$0.00
	Personal Care											
3402	Hair Mousses	9.0%	0.76	8	33,778	$0.00	$0.02	$0.03	$0.07	$0.03	$0.09	$0.06
3503	Nail Polish Remover	21.0%	0.47	6	11,937	$0.00	$0.02	$0.00	$0.00	$0.00	$0.02	$0.01
	Pesticides											
4305	Crawling Bug Insecticides (Aerosols)	28.0%	3.81	13	33,495	$0.01	$0.06	$0.01	$0.01	$0.02	$0.07	$0.05
4302	Flying Insect Insecticide (Aerosols)	30.0%	0.6	13	4,923	$0.03	$0.28	$0.00	$0.00	$0.04	$0.28	$0.16
4304	Lawn and Garden Insecticides (Non-Aerosol)	1.0%	1.35	13	332,308	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
				SUM	1,798,654							

MIN UNIT COST INCREASE	$0.00
MAX UNIT COST INCREASE	$0.28
SWA-UNIT COST INCREASE	$0.02

Notes:

(1) (E) = Total Annualized Non-recurring Cost / [(D) * 365]

(2) Figures in "( )" are negative (i.e., indicates potential cost savings)