(vii) At least 15.0 mpg, but less than 16.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,500.

(viii) At least 14.0 mpg, but less than 15.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,800.

(ix) At least 13.0 mpg, but less than 14.0 mpg, the Gas Guzzler Tax statement shall show a tax of $2,200.

(x) Less than 13.0 mpg, the Gas Guzzler Tax statement shall show a tax of $2,650.

(g) *This paragraph applies to 1986 and later model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 22.5 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 22.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 21.5 mpg, but less than 22.5 mpg, the Gas Guzzler Tax statement shall show a tax of $500.

(iii) At least 20.5 mpg, but less than 21.5 mpg, the Gas Guzzler Tax statement shall show a tax of $650.

(iv) At least 19.5 mpg, but less than 20.5 mpg, the Gas Guzzler Tax statement shall show a tax of $850.

(v) At least 18.5 mpg, but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,050.

(vi) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,300.

(vii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,500.

(viii) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,850.

(ix) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,250.

(x) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,700.

(xi) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,200.

(xii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,850.

(Title V of the Motor Vehicle Information and Cost Savings Act, 15 U.S.C. 2001 *et. seq.*, as amended by sec. 403 of the National Energy Conservation Policy Act, Pub. L. 95–619, 92 Stat. 3256)

[45 FR 51165, July 31, 1980, as amended at 50 FR 27187, July 1, 1985]

§600.513–91 Gas Guzzler Tax.

(a) This section applies only to passenger automobiles sold after December 27, 1991, regardless of the model year of those vehicles. For alcohol dual fuel and natural gas dual fuel automobiles, the fuel economy while such automobiles are operated on gasoline will be used for Gas Guzzler Tax assessments.

(1) The provisions of this section do not apply to passenger automobiles exempted for Gas Guzzler Tax assessments by applicable federal law and regulations. However, the manufacturer of an exempted passenger automobile may, in its discretion, label such vehicles in accordance with the provisions of this section.

(2) For 1991 and later model year passenger automobiles, the combined general label model type fuel economy value used for Gas Guzzler Tax assessments shall be calculated in accordance with the following equation, rounded to the nearest 0.1 mpg:

$$FE_{adj} = FE[((0.55\times a_g\times c) + (0.45\times c) + (0.5556\times a_g) + 0.4487) / ((0.55\times a_g) + 0.45)] + IW_g$$

Where:

FE_{adj}=Fuel economy value to be used for determination of gas guzzler tax assessment rounded to the nearest 0.1 mpg.

FE=Combined model type fuel economy calculated in accordance with §600.207, rounded to the nearest 0.0001 mpg.

a_g=Model type highway fuel economy, calculated in accordance with §600.207, rounded to the nearest 0.0001 mpg divided by the model type city fuel economy calculated in accordance with §600.207, rounded to the nearest 0.0001 mpg. The quotient shall be rounded to 4 decimal places.

c=gas guzzler adjustment factor=1.300×10^{-3} for the 1986 and later model years.

$IW_g = (9.2917\times10^{-3} \times SF_{3IWCG}\ FE_{3IWCG}) - (3.5123\times10^{-3} \times SF_{4ETWG} \times FE_{4IWCG})$

NOTE: Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWCG}=The 3000 lb. inertia weight class sales in the model type divided by the total model type sales; the quotient shall be rounded to 4 decimal places.

SF_{4ETWG}=The 4000 lb. equivalent test weight sales in the model type divided by the total model type sales, the quotient shall be rounded to 4 decimal places.

FE_{3IWCG}=The 3000 lb. inertial weight class base level combined fuel economy used to calculate the model type fuel economy rounded to the nearest 0.0001 mpg.

FE_{4IWCG}=The 4000 lb. inertial weight class base level combined fuel economy used to calculate the model type fuel economy f/ rounded to the nearest 0.001 mpg.

(b)(1) For passenger automobiles sold after December 31, 1990, with a combined general label model type fuel economy value of less than 22.5 mpg, calculated in accordance with paragraph (a)(2) of this section and rounded to the nearest 0.1 mpg, each vehicle fuel economy label shall include a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act. The tax amount stated shall be as specified in paragraph (b)(2) of this section.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 22.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 21.5 mpg, but less than 22.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,000.

(iii) At least 20.5 mpg, but less than 21.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,300.

(iv) At least 19.5 mpg, but less than 20.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,700.

(v) At least 18.5 mpg; but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,100.

(vi) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,600.

(vii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,000.

(viii) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,700.

(ix) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of $4,500.

(x) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of $5,400.

(xi) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of $6,400.

(xii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of $7,700.

[56 FR 55465, Oct. 28, 1991, as amended at 59 FR 39661, Aug. 3, 1994]

APPENDIX I TO PART 600—HIGHWAY FUEL ECONOMY DRIVING SCHEDULE (APPLICABLE TO 1978 AND LATER MODEL YEAR AUTOMOBILES)

[SPEED (MPH) VS TIME (SEC)]

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
0	Sample On	50	38.6	100	48.5	150	44.1	200	43.4	250	48.0	300	33.4	350	59.0
1	0.0	51	39.3	101	48.8	151	44.3	201	43.2	251	48.0	301	35.6	351	58.9
2	0.0	52	40.0	102	49.1	152	44.4	202	43.2	252	48.0	302	37.5	352	58.8
3	2.0	53	40.7	103	49.2	153	44.6	203	43.1	253	48.1	303	39.1	353	58.6
4	4.9	54	41.4	104	49.1	154	44.7	204	43.0	254	48.2	304	40.2	354	58.4
5	8.1	55	42.2	105	49.1	155	44.9	205	43.0	255	48.2	305	41.1	355	58.2
6	11.3	56	42.9	106	49.0	156	45.2	206	43.1	256	48.1	306	41.8	356	58.1
7	14.5	57	43.5	107	49.0	157	45.7	207	43.4	257	48.6	307	42.4	357	58.0
8	17.3	58	44.0	108	49.1	158	45.9	208	43.9	258	48.9	308	42.8	358	57.9
9	19.6	59	44.3	109	49.2	159	46.3	209	44.0	259	49.1	309	43.3	359	57.6
10	21.8	60	44.5	110	49.3	160	46.8	210	43.5	260	49.1	310	43.8	360	57.4
11	24.0	61	44.8	111	49.4	161	46.9	211	42.6	261	49.1	311	44.3	361	57.2
12	25.8	62	44.9	112	49.5	162	47.0	212	41.5	262	49.1	312	44.7	362	57.1
13	27.1	63	45.0	113	49.5	163	47.1	213	40.7	263	49.1	313	45.0	363	57.0
14	28.0	64	45.1	114	49.5	164	47.6	214	40.0	264	49.0	314	45.2	364	57.0
15	29.0	65	45.4	115	49.4	165	47.9	215	40.0	265	48.9	315	45.4	365	56.9
16	30.0	66	45.7	116	49.1	166	48.0	216	40.3	266	48.2	316	45.5	366	56.9
17	30.7	67	46.0	117	48.9	167	48.0	217	41.0	267	47.7	317	45.8	367	56.9
18	31.5	68	46.3	118	48.6	168	47.9	218	42.0	268	47.5	318	46.0	368	57.0
19	32.2	69	46.5	119	48.4	169	47.8	219	42.7	269	47.2	319	46.1	369	57.0
20	32.9	70	46.8	120	48.1	170	47.3	220	43.1	270	46.7	320	46.5	370	57.0
21	33.5	71	46.9	121	47.7	171	46.7	221	43.2	271	46.2	321	46.8	371	57.0

[SPEED (MPH) VS TIME (SEC)]

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
22	34.1	72	47.0	122	47.4	172	46.2	222	43.4	272	46.0	322	47.1	372	57.0
23	34.6	73	47.1	123	47.3	173	45.9	223	43.9	273	45.8	323	47.7	373	57.0
24	34.9	74	47.2	124	47.5	174	45.7	224	44.3	274	45.6	324	48.3	374	57.0
25	35.1	75	47.3	125	47.8	175	45.5	225	44.7	275	45.4	325	49.0	375	57.0
26	35.7	76	47.2	126	47.9	176	45.4	226	45.1	276	45.2	326	49.7	376	57.0
27	35.9	77	47.1	127	48.0	177	45.3	227	45.4	277	45.0	327	50.3	377	56.9
28	35.8	78	47.0	128	47.9	178	45.0	228	45.8	278	44.7	328	51.0	378	56.8
29	35.3	79	46.9	129	47.9	179	44.0	229	46.5	279	44.5	329	51.7	379	56.5
30	34.9	80	46.9	130	47.9	180	43.1	230	46.9	280	44.2	330	52.4	380	56.2
31	34.5	81	46.9	131	48.0	181	42.2	231	47.2	281	43.5	331	53.1	381	56.0
32	34.6	82	47.0	132	48.0	182	41.5	232	47.4	282	42.8	332	53.8	382	56.0
33	34.8	83	47.1	133	48.0	183	41.5	233	47.3	283	42.0	333	54.5	383	56.0
34	35.1	84	47.1	134	47.9	184	42.1	234	47.3	284	40.1	334	55.2	384	56.1
35	35.7	85	47.2	135	47.3	185	42.9	235	47.2	285	38.6	335	55.8	385	56.4
36	36.1	86	47.1	136	46.0	186	43.5	236	47.2	286	37.5	336	56.4	386	56.7
37	36.2	87	47.0	137	43.3	187	43.9	237	47.2	287	35.8	337	56.9	387	56.9
38	36.5	88	46.9	138	41.2	188	43.6	238	47.1	288	34.7	338	57.0	388	57.1
39	36.7	89	46.5	139	39.5	189	43.3	239	47.0	289	34.0	339	57.1	389	57.3
40	36.9	90	46.3	140	39.2	190	43.0	240	47.0	290	33.3	340	57.3	390	57.4
41	37.0	91	46.2	141	39.0	191	43.1	241	46.9	291	32.5	341	57.6	391	57.4
42	37.0	92	46.3	142	39.0	192	43.4	242	46.8	292	31.7	342	57.8	392	57.2
43	37.0	93	46.5	143	39.1	193	43.9	243	46.9	293	30.6	343	58.0	393	57.0
44	37.0	94	46.9	144	39.5	194	44.3	244	47.0	294	29.6	344	58.1	394	56.9
45	37.0	95	47.1	145	40.1	195	44.6	245	47.2	295	28.8	345	58.4	395	56.6
46	37.0	96	47.4	146	41.0	196	44.9	246	47.5	296	28.4	346	58.7	396	56.3
47	37.1	97	47.7	147	42.0	197	44.8	247	47.9	297	28.6	347	58.8	397	56.1
48	37.3	98	48.0	148	43.1	198	44.4	248	48.0	298	29.5	348	58.9	398	56.4
49	37.8	99	48.2	149	43.7	199	43.9	249	48.0	299	31.4	349	59.0	399	56.7

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
400	57.1	450	58.2	500	54.7	550	55.8	600	48.3	650	50.2	700	54.2	750	26.8
401	57.5	451	58.1	501	54.6	551	55.6	601	48.0	651	50.7	701	54.5	751	24.5
402	57.8	452	58.0	502	54.4	552	55.4	602	47.9	652	51.1	702	54.8	752	21.5
403	58.0	453	58.0	503	54.3	553	55.2	603	47.8	653	51.7	703	55.0	753	19.5
404	58.0	454	58.0	504	54.3	554	55.1	604	47.7	654	52.2	704	55.5	754	17.4
405	58.0	455	58.0	505	54.2	555	55.0	605	47.9	655	52.5	705	55.9	755	15.1
406	58.0	456	58.0	506	54.1	556	54.9	606	48.3	656	52.1	706	56.1	756	12.4
407	58.0	457	58.0	507	54.1	557	54.6	607	49.0	657	51.6	707	56.3	757	9.7
408	58.0	458	57.9	508	54.1	558	54.4	608	49.1	658	51.1	708	56.4	758	7.0
409	57.9	459	57.9	509	54.0	559	54.2	609	49.0	659	51.0	709	56.5	759	5.0
410	57.8	460	58.0	510	54.0	560	54.1	610	48.9	660	51.0	710	56.7	760	3.3
411	57.7	461	58.1	511	54.0	561	53.8	611	48.0	661	51.1	711	56.9	761	2.0
412	57.7	462	58.1	512	54.0	562	53.4	612	47.1	662	51.4	712	57.0	762	0.7
413	57.8	463	58.2	513	54.0	563	53.3	613	46.2	663	51.7	713	57.3	763	0.0
414	57.9	464	58.3	514	54.0	564	53.1	614	46.1	664	52.0	714	57.7	764	0.0
415	58.0	465	58.3	515	54.0	565	52.9	615	46.1	665	52.2	715	58.2	765	Sample Off
416	58.1	446	58.3	516	54.0	566	52.6	616	46.2	666	52.5	716	58.8		
417	58.4	467	58.2	517	54.1	567	52.4	617	46.9	667	52.8	717	59.1		
418	58.9	468	58.1	518	54.2	568	52.2	618	47.8	668	52.7	718	59.2		
419	59.1	469	58.0	519	54.5	569	52.1	619	49.0	669	52.6	719	59.1		
420	59.4	470	57.8	520	54.8	570	52.0	620	49.7	670	52.3	720	58.8		
421	59.8	471	57.5	521	54.9	571	52.0	621	50.6	671	52.3	721	58.5		
422	59.9	472	57.1	522	55.0	572	52.0	622	51.5	672	52.4	722	58.1		
423	59.9	473	57.0	523	55.1	573	52.0	623	52.2	673	52.5	723	57.7		
424	59.8	474	56.6	524	55.2	574	52.1	624	52.7	674	52.7	724	57.3		
425	59.6	475	56.1	525	55.2	575	52.0	625	53.0	675	52.7	725	57.1		
426	59.4	476	56.0	526	55.3	576	52.0	626	53.6	676	52.4	726	56.8		
427	59.2	477	55.8	527	55.4	577	51.9	627	54.0	677	52.1	727	56.5		
428	59.1	478	55.5	528	55.5	578	51.6	628	54.1	678	51.7	728	56.2		
429	59.0	479	55.2	529	55.6	579	51.4	629	54.4	679	51.1	729	55.5		
430	58.9	480	55.1	530	55.7	580	51.1	630	54.7	680	50.5	730	54.6		
431	58.7	481	55.0	531	55.8	581	50.7	631	55.1	681	50.1	731	54.1		
432	58.6	482	54.9	532	55.9	582	50.3	632	55.4	682	49.8	732	53.7		
433	58.5	483	54.9	533	56.0	583	49.8	633	55.4	683	49.7	733	53.2		
434	58.4	484	54.9	534	56.0	584	49.3	634	55.0	684	49.6	734	52.9		
435	58.4	485	54.9	535	56.0	585	48.7	635	54.5	685	49.5	735	52.5		
436	58.3	486	54.9	536	56.0	586	48.2	6.36	53.6	686	49.5	736	52.0		
437	58.2	487	54.9	537	56.0	587	48.1	637	52.5	687	49.7	737	51.3		
438	58.1	488	55.0	538	56.0	588	48.0	638	50.2	688	50.0	738	50.5		
439	58.0	489	55.0	539	56.0	589	48.0	6.39	48.2	689	50.2	739	49.5		
440	57.9	490	55.0	540	56.0	590	48.1	640	46.5	690	50.6	740	48.5		

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
441	57.9	491	55.0	541	56.0	591	48.4	641	46.2	691	51.1	741	47.6		
442	57.9	492	55.0	542	56.0	592	48.9	642	46.0	692	51.6	742	46.8		
443	57.9	493	55.0	543	56.0	593	49.0	643	46.0	693	51.9	743	45.6		
444	57.9	494	55.1	544	56.0	594	49.1	644	46.3	694	52.0	744	44.2		
445	58.0	495	55.1	545	56.0	595	49.1	645	46.8	695	52.1	745	42.5		
446	58.1	496	55.0	546	56.0	596	49.0	646	47.5	696	52.4	746	39.2		
447	58.1	497	54.9	547	55.9	597	49.0	647	48.2	697	52.9	747	35.9		
448	58.2	498	54.9	548	55.9	598	48.9	648	48.8	698	53.3	748	32.6		
449	58.2	499	54.8	549	55.9	599	48.6	649	49.5	699	53.7	749	29.3		

[42 FR 45667, Sept. 12, 1977]

APPENDIX II TO PART 600—SAMPLE FUEL ECONOMY CALCULATIONS

(a) This sample fuel economy calculation is applicable to 1978 through 1987 model year automobiles.

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

HC=.139 grams/mile
CO=1.59 grams/mile
CO_2=317 grams/mile

According to the procedure in §600.113–78, the city fuel economy or MPG_c, for the vehicle may be calculated by substituting the HC, CO, and CO_2 grams/mile values into the following equation.

$$MPG_c = \frac{2421}{(0.866 \times HC) + (0.429 \times CO) + (0.273 \times CO_2)}$$

$$MPG_c = \frac{2421}{(0.866 \times 1.39) + (0.429 \times 1.59) + (0.273 \times 317)}$$

MPG_c=27.7

(2) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and calculation similar to that shown in paragraph (a) by this appendix resulted in a highway fuel economy or MPG_h of 36.9. According to the procedure in §600.113, the combined fuel economy (called $MPG_{c/h}$) for the vehicle may be calculated by substituting the city and highway fuel economy values into the following equation:

$$MPG_{c/h} = \frac{1}{\frac{0.55}{MPG_c} + \frac{0.45}{MPG_h}}$$

$$MPG_{c/h} = \frac{1}{\frac{0.55}{27.7} + \frac{0.45}{36.9}}$$

$$MPG_{c/h} = 31.2$$

(b) This sample fuel economy calculation is applicable to 1988 and later model year automobiles.

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

HC = .139 grams/mile.
CO = 1.59 grams/mile.
CO_2 = 317 grams/mile.

(2) Assume that the test fuel used for this test had the following properties:

SG = 0.745.
CWF = 0.868.
NHV = 18,478 Btu/lb.

(3) According to the procedure in §600.113–08, the city fuel economy or MPG_c, for the vehicle may be calculated by substituting the HC, CO, and CO_2 gram/mile values and the SG, CWF, and NHV values into the following equation:

MPG_c = (5174 × 10^4× CWF × SG) / [((CWF × HC) + (0.429 × CO + (0.273 × CO_2)) ((0.6 × SG × NHV) + 5471)]

Example:

MPG_c = (5174 × 10^4 × 0.868 × 0.745) / [(0.868 × .139 + 0.429 × 1.59 + 0.273 × 317)(0.6 × 0.745 × 18478 + 5471)]

MPG_c = 27.9

(4) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and a calculation similar to that shown in (b)(3) of this section resulted in a highway fuel economy of MPG_h of 36.9. According to the procedure in §600.210(c), the combined fuel economy (called MPG_{comb}) for the vehicle may be calculated by substituting the city and highway fuel economy values into the following equation:

$$MPG_{comb} = \frac{1}{\frac{0.55}{MPG_c} + \frac{0.45}{MPG_h}}$$

$$MPG_{comb} = \frac{1}{\frac{0.55}{27.9} + \frac{0.45}{36.9}}$$

$$MPG_{comb} = 31.3$$

[51 FR 37852, Oct. 24, 1986, as amended at 71 FR 77958, Dec. 27, 2006]

APPENDIX III TO PART 600—SAMPLE FUEL ECONOMY LABEL CALCULATION

Suppose that a manufacturer called Mizer Motors has a product line composed of eight car lines. Of these eight, four are available with the 3.0 liter, 6 cylinder, sequential multi-point fuel injection, 4-valve per cylinder, and 3-way catalyst engine. These four car lines are:

Ajax
Boredom III
Dodo
Castor (Station Wagon)

A. A car line is defined in subpart A (with additional guidance provided in EPA Advisory Circular 89) as a group of vehicles within a make or division which has a degree of commonality in construction. Car line does not consider any level of decor or opulence and is not generally distinguished by such characteristics as roofline, number of doors, seats, or windows. Station wagons and light duty trucks are, however, identified separately from the remainder of each car line. In other words, a Castor station wagon would be considered a different car line than the normal Castor car line made up of sedans, coupes, etc.

B. The engine considered here is defined as a basic engine in subpart A of this part (with additional guidance provided in EPA Advisory Circular 83A). A basic engine is a unique combination of manufacturer, engine displacement, number of cylinders, fuel system, catalyst usage and other engine and emission control system characteristics specified by the Administrator. A model type is a unique combination of car line, basic engine, and transmission class. Thus Ajax is a car line but Ajax 3.0 liter, 6 cylinder manual four-speed transmission is a model type whereas Ajax 3.0 liter, 6 cylinder automatic three-speed transmission is a different model type.

C. The following calculations provide an example of the procedures described in subpart C of this part for the calculation of vehicle configuration and model type fuel economy values. In order to simplify the presentation, only city fuel economy values are included (as determined by either the derived 5-cycle method or vehicle-specific 5-cycle based method). The procedure is identical for highway and combined fuel economy values.

Step I. Input data as supplied by the manufacturer or as determined from testing conducted by the Administrator.

Manufacturer—Mizer Motors

Basic Engine: (3.0 liter, 6 cylinder, sequential multi-point fuel injection, 4-valve per cylinder, 3-way catalyst).

Test vehicle carline	Engine code	Trans	Inertia weight	Axle ratio	Harmonically averaged. city MPG	Specific label MPG [1]	Vehicle config. sales
Ajax	1	M–4	3500	2.73	16.1001	16	15,000
Ajax	2	A–3	3500	2.56	15.9020	16	35,000
Boredom III	4	M–4	4000	3.08	14.2343	14	10,000
Ajax	3	M–4	4000	3.36	15.0000	15	15,000
Boredom III	8	A–3	4000	2.56	13.8138	14	25,000
Boredom III	5	A–3	4500	3.08	13.2203	13	20,000
Castor	5	A–3	5000	3.08	10.6006	11	40,000

[1] The vehicle configuration fuel economy values, rounded to the nearest mile per gallon, are the fuel economy values that would be used on specific labels for that vehicle configuration.

Step II. Group vehicle fuel economy and sales data according to base level combinations within this basic engine.

Base level	Transmission class	Inertia weight	Miles per gallon	Projected vehicle configuration sales
A	Manual-4	3,500	16.1001	15,000
B	Automatic-3	3,500	15.9020	35,000
C	Manual-4	4,000	14.2343	10,000
C	Manual-4	4,000	15.0000	15,000
D	Automatic-3	4,000	13.8138	25,000
E	Automatic-3	4,500	13.2203	20,000
F	Automatic-3	5,000	10.6006	40,000

Step III. Determine base level fuel economy values.

A. For all the base levels except the base level which includes 4,000 pound, manual four-speed transmission data, the base level fuel economy is as noted in Step II since only one vehicle configuration was tested within each of these base levels.

3,500 lb/M4 transmission.	16.1001 mpg.
3,500 lb/A3 transmission.	15.9020 mpg.
4,000 lb/A3 transmission.	13.8138 mpg.
4,500 lb/A3 transmission.	13.2203 mpg.
5,000 lb/A3 transmission.	10.6006 mpg.

B. Since data from more than one vehicle configuration are included in the 4,000-pound, manual four-speed transmission base level, this fuel economy is harmonically averaged in proportion to the percentage of total sales of all vehicle configurations tested within that base level represented by each vehicle configuration tested within that base level.

$$\text{Base level fuel economy} = \frac{1}{\left[\begin{array}{l}\text{Fraction of total sales of configurations}\\ \text{tested represented by}\\ \text{configuration No. 1 sales}\end{array}\right]\left[\dfrac{1}{\begin{array}{l}\text{Configuration}\\ \text{No. 1 fuel economy}\end{array}}\right] + \left[\begin{array}{l}\text{Fraction of total sales}\\ \text{of configurations tested}\\ \text{represented by configuration}\\ \text{No. 2 sales}\end{array}\right]\left[\dfrac{1}{\begin{array}{l}\text{Configuration}\\ \text{No. 2 1 fuel economy}\end{array}}\right]}$$

Base level: M4 transmission, 4000 pounds:

$$\frac{1}{\left[\frac{10000}{25000}\right]\frac{1}{14.2343}+\left[\frac{15000}{25000}\right]\frac{1}{15.0000}}=14.6840 \text{ miles per gallon}$$

Therefore, the 4000 pound, M4 transmission fuel economy is 14.6840 miles per gallon.

Note that the car line of the test vehicle using a given engine makes no difference—only the weight and transmission do.

Step IV. For each model type offered by the manufacturer with that basic engine, determine the sales fraction represented by each inertia weight/transmission class combination and the corresponding fuel economy.

Ajax	M4	0.4000 at 3,500 lb	16.1001
		0.6000 at 4,000 lb	14.6840
	A3	0.3000 at 3,500 lb	15.9020
		0.7000 at 4,000 lb	13.8138
Dodo	M4	0.4000 at 3,500 lb	16.1001
		0.6000 at 4,000 lb	14.6840
	A3	0.3000 at 3,500 lb	15.9020
		0.7000 at 4,000 lb	13.8138
Boredom III	M4	1.0000 at 4,000 lb	14.6840
	A3	0.2500 at 4,000 lb	13.8138
		0.7500 at 4,500 lb	13.2203
Castor	A3	0.2000 at 4,500 lb	13.2203
		0.8000 at 5,000 lb	10.6006

Step V. Determine fuel economy for each model type (that is, car line/basic engine/transmission class combination).

Ajax, 3.0 liter, 6 cylinder, A3 transmission, model type MPG is calculated as follows:

$$\frac{1}{\left[\frac{\textit{The}\text{ fraction of Ajax vehicles using the 3.0 liter, 6 cylinder engine which fall in the 3500 lb inertia weight class with an A3 transmission}}{\text{Fuel economy for 3.0 liter, 6 cylinder 3500 lb A3 transmission base level}}\right]+\left[\frac{\text{The fraction of Ajax vehicles using the 3.0 liter, 6 cylinder engine which fall in the 4000 lb inertia weight class with an A3 transmission}}{\text{Fuel economy for 3.0 liter 6 cylinder 4000 lb A3 transmission base level}}\right]}$$

$$=\frac{1}{\left[\frac{0.3000}{15.9020}\right]+\left[\frac{0.7000}{13.8138}\right]}=14.3803 \text{ mpg, which rounds to 14 MPG}^{1}$$

Similarly, Ajax and Dodo 3.0 liter, 6 cylinder, M4 model type MPG is calculated as follows:

$$\frac{1}{\left[\frac{0.4000}{16.1001}\right]+\left[\frac{0.6000}{14.6840}\right]}=15.2185,\ \text{which rounds to 15 MPG}^{1}$$

Dodo 3.0 liter, 6 cylinder, A3 model type MPG is calculated as follows:

$$=\frac{1}{\left[\frac{0.3000}{15.9020}\right]+\left[\frac{0.7000}{13.8138}\right]}=14.3803\ \text{mpg},\ \text{which rounds to 14 MPG}^{1}$$

Boredom III 3.0 liter 6 cylinder M4 model type MPG = 14.6840 mpg, which rounds to 15 mi./gal[1]

Boredom III 3.0 liter, 6 cylinder, A3 model type MPG is calculated as follows:

$$\frac{1}{\left[\frac{0.2500}{13.8138}\right]+\left[\frac{0.7500}{13.2203}\right]}=13.3638,\ \text{which rounds to 13 MPG}^{1}$$

Castor 3.0 liter, 6 cylinder, A3 model type MPG is calculated as follows:

$$\frac{1}{\left[\frac{0.2000}{13.2203}\right]+\left[\frac{0.8000}{10.6006}\right]}=11.0381,\ \text{which rounds to 11 MPG}^{1}$$

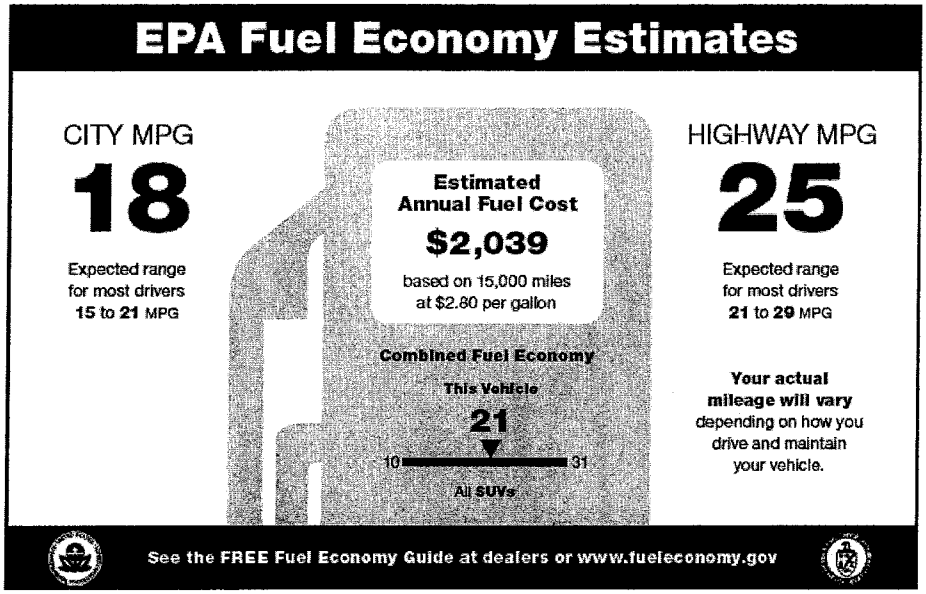
Note that even though no Dodo was actually tested, this approach permits its fuel economy figure to be estimated, based on the inertia weight distribution of projected Dodo sales within a specific engine and transmission grouping.

[71 FR 77958, Dec. 27, 2006]

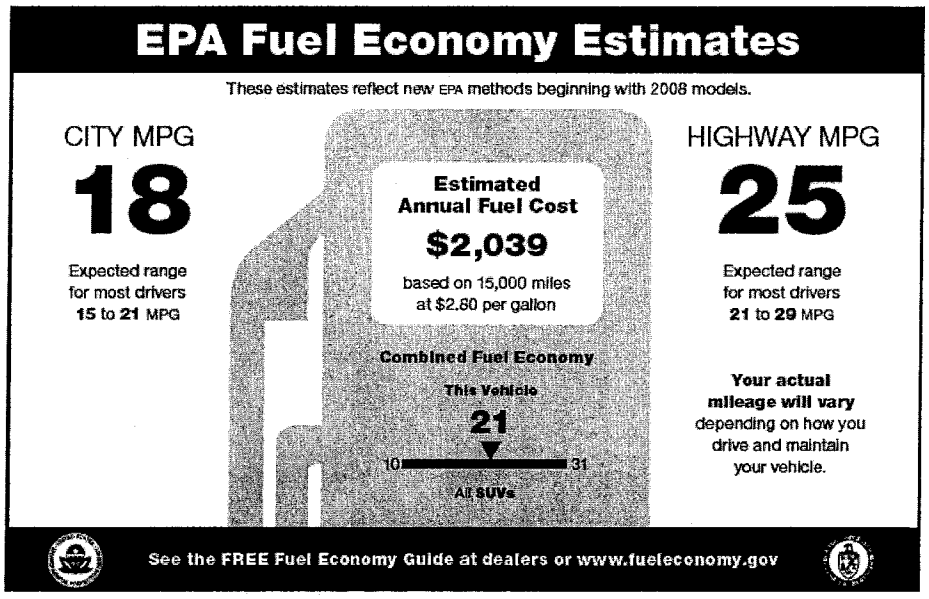
APPENDIX IV TO PART 600—SAMPLE FUEL ECONOMY LABELS FOR 2008 AND LATER MODEL YEAR VEHICLES

A. Gasoline (or diesel)-fueled vehicle label

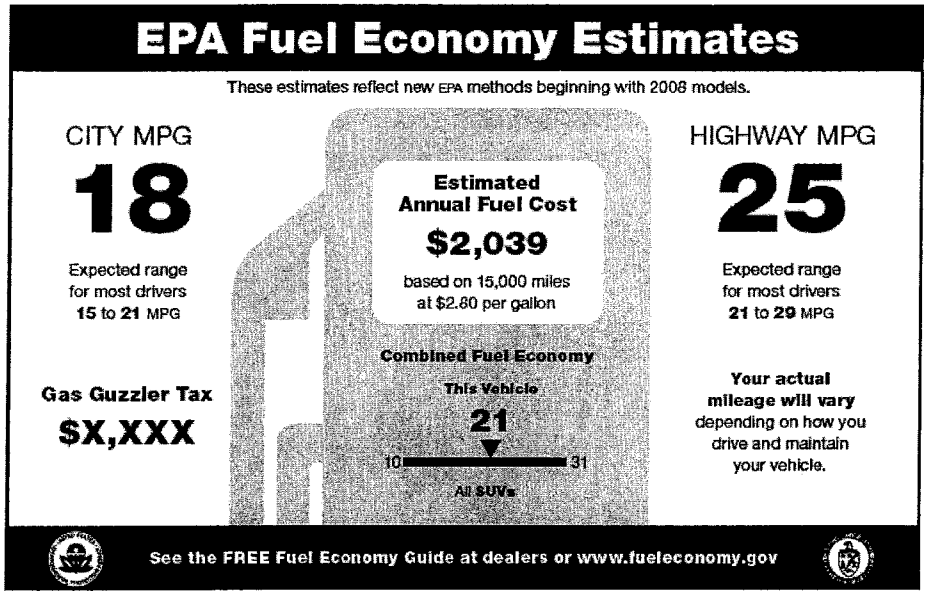
[1]The model type fuel economy values rounded to the nearest mile per gallon, are the fuel economy values listed in the EPA Fuel Economy Guide and used on the general labels (window stickers) for production vehicles for that model year.



B. Gasoline (or diesel)-fueled vehicle label (with transitional text statement for MY 2008 and 2009 vehicles only)

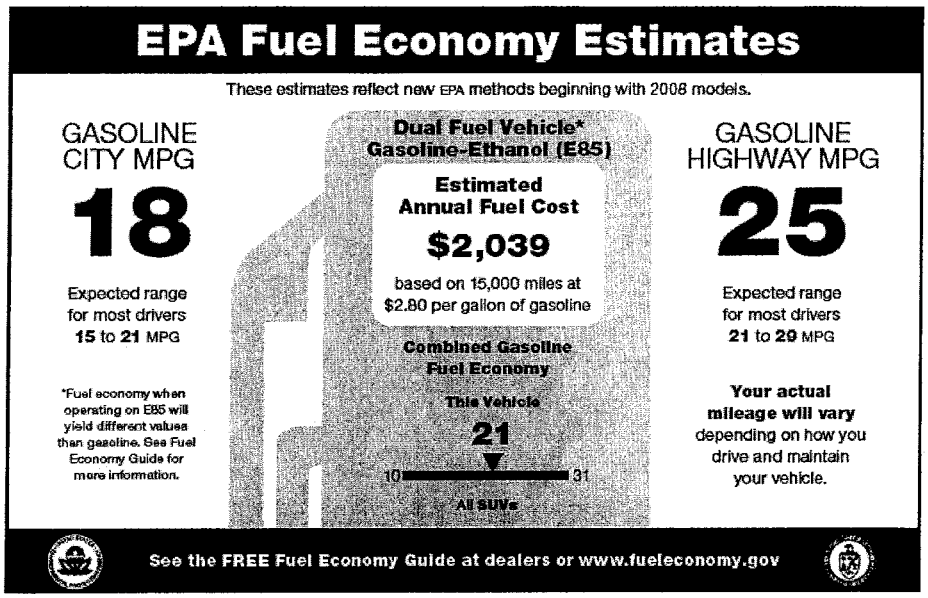


C. Gasoline-fueled Gas Guzzler vehicle label

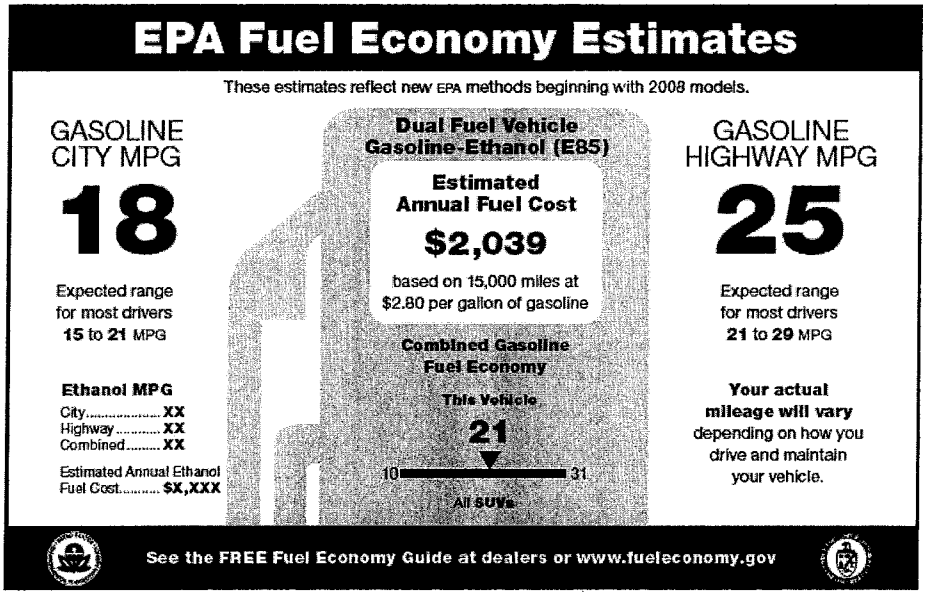


D. Dual Fuel Vehicle Label (Ethanol/Gasoline)

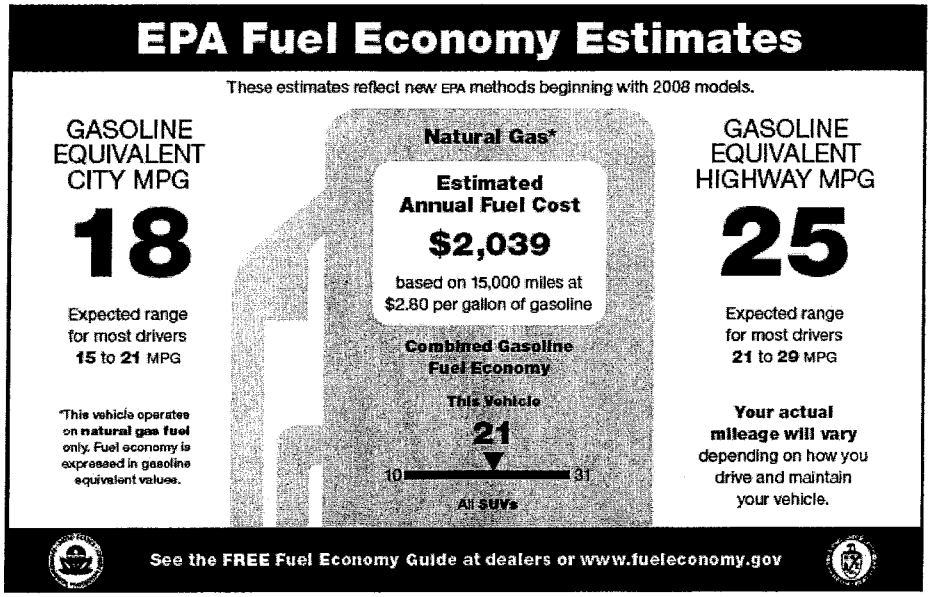
Option 1—without alternate fuel economy)



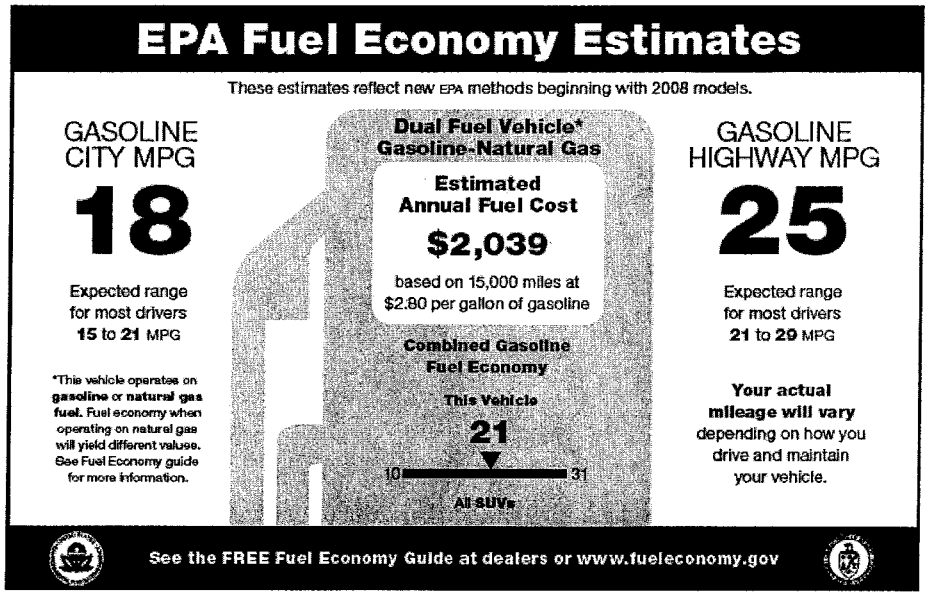
Option 2—with alternate fuel economy



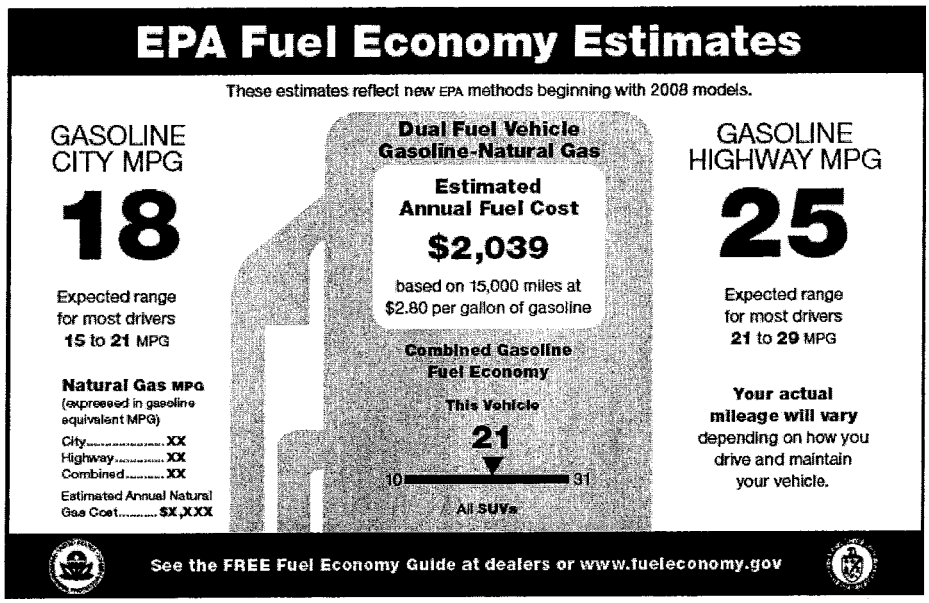
E. Natural Gas Vehicle Label



F. Dual Fuel Natural Gas Label
Option 1—without alternate fuel economy



Option 2—With alternate fuel economy



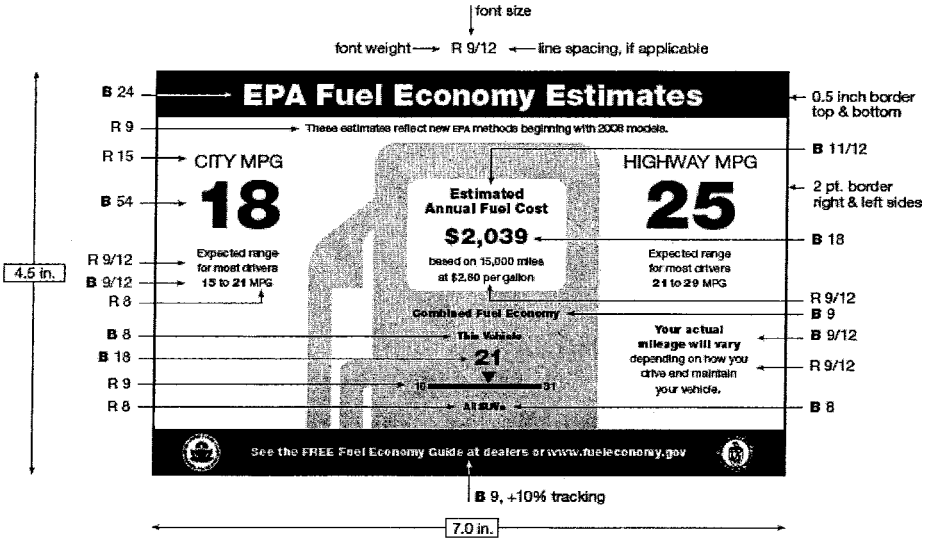
[71 FR 77961, Dec. 27, 2006]

APPENDIX V TO PART 600—FUEL ECONOMY LABEL STYLE GUIDELINES FOR 2008 AND LATER MODEL YEAR VEHICLES

A. Format Guidelines for Gasoline (or Diesel) Vehicles

Gasoline Fuel Economy Label

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.



Combined fuel economy bar is a 4 pt. (0.056 in.) rule that is 90 pt. (1.25 in.) long.
Indicator triangle above bar is from Windings 3 at 14 pt. size. If drawn, 12 pt. (0.167 in.) each side.

B. Format Guidelines for Ethanol and Natural Gas Dual Fuel Vehicles. Unless otherwise indicated, the format specifications in Appendix V. A. apply.

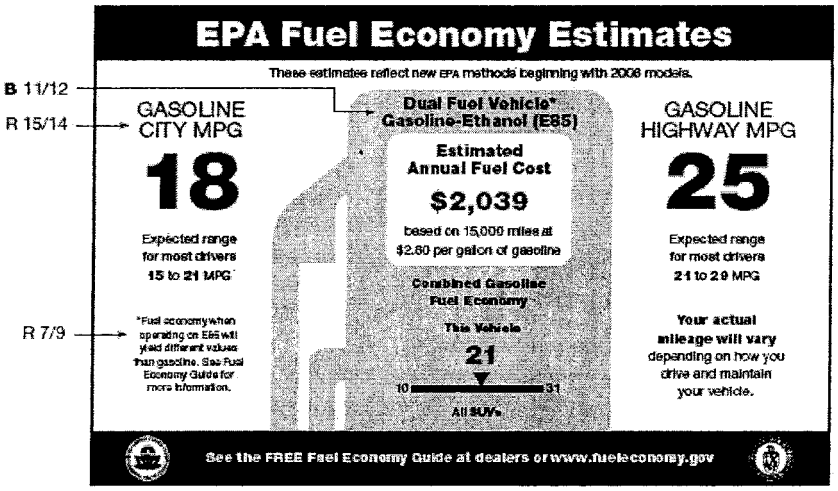
Dual Fuel Vehicle: Gasoline-Ethanol

BASIC FUEL ECONOMY LABEL

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.

font size

font weight → R 9/12 ← line spacing, if applicable



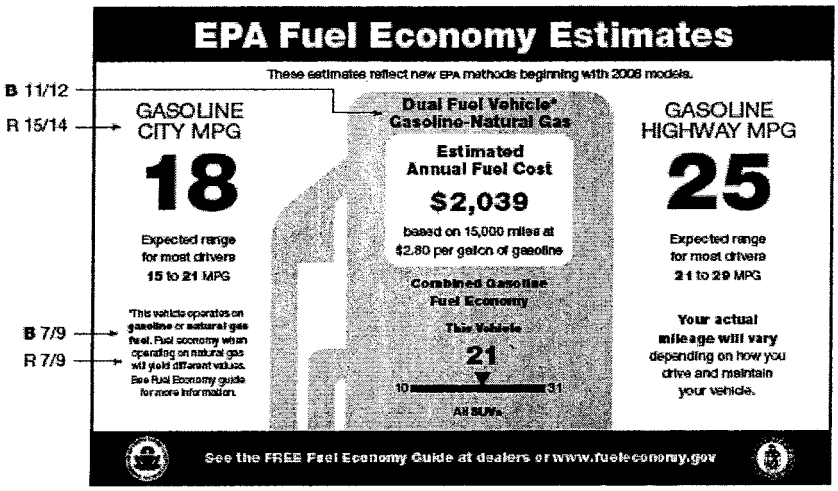
Dual Fuel Vehicle: Gasoline-Natural Gas

BASIC FUEL ECONOMY LABEL

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.

font size

font weight → R 9/12 ← line spacing, if applicable



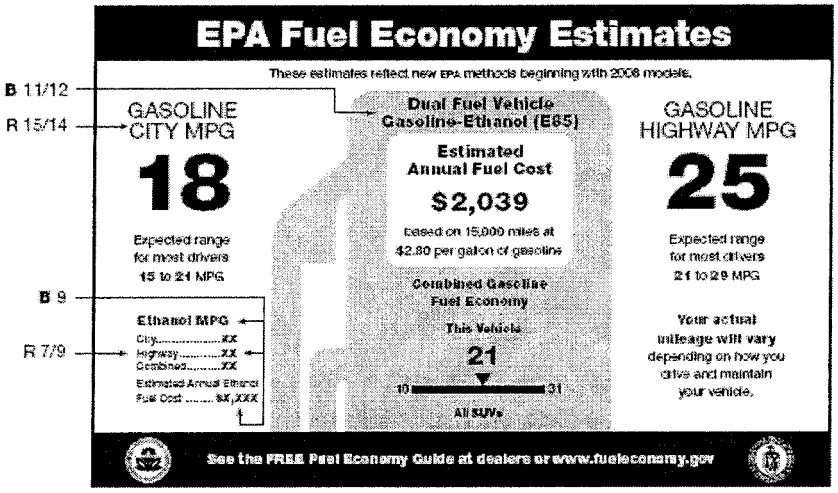
Dual Fuel Vehicle: Gasoline-Ethanol

WITH ETHANOL MILEAGE INFORMATION

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.

font size

font weight → R 9/12 ← line spacing, if applicable



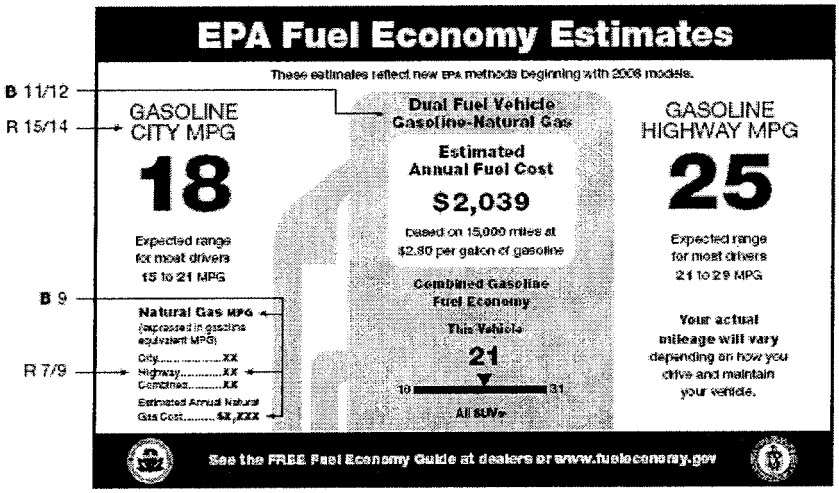
Dual Fuel Vehicle: Gasoline-Natural Gas

WITH NATURAL GAS MILEAGE INFORMATION

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.

font size

font weight → R 9/12 ← line spacing, if applicable



C. Format Guidelines showing Gas Guzzler. Unless otherwise indicated, the format specifications in Appendix V. A. apply.

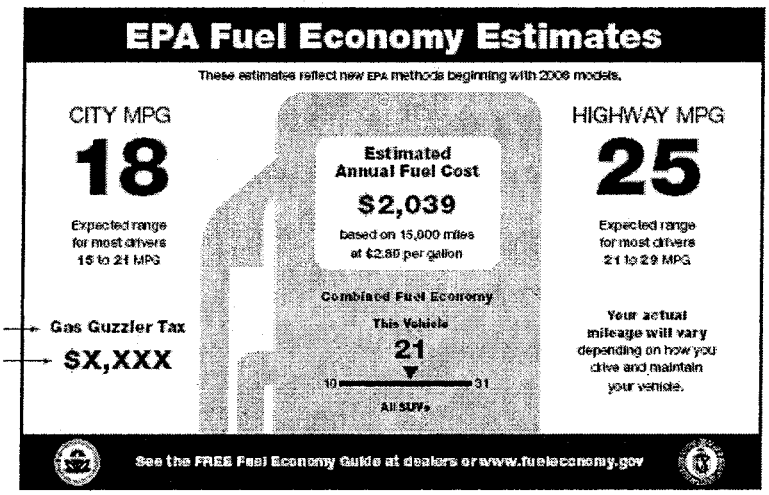
Gasoline Fuel Economy Label

WITH GAS GUZZLER TAX

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.

font size

font weight → R 9/12 ← line spacing, if applicable



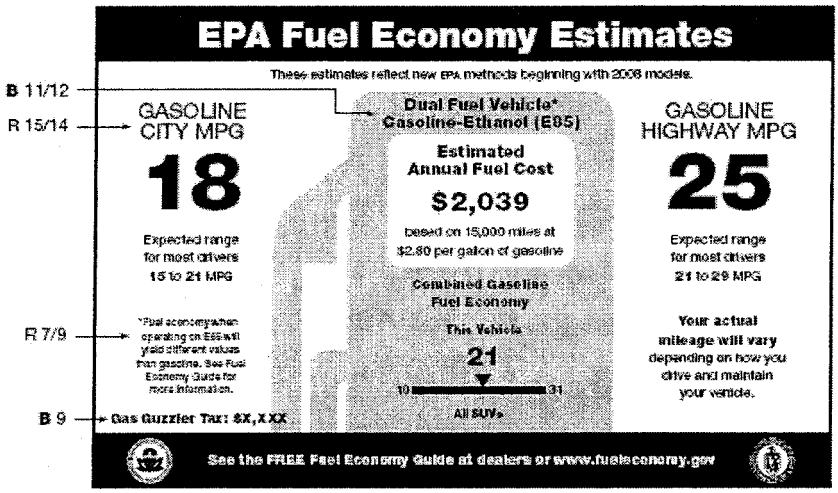
Dual Fuel Vehicle: Gasoline-Ethanol

WITH GAS GUZZLER TAX

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.

font size

font weight → R 9/12 ← line spacing, if applicable



D. Format Guidelines for Natural Vehicles. Unless otherwise indicated, the format specifications in Appendix V. A. apply.

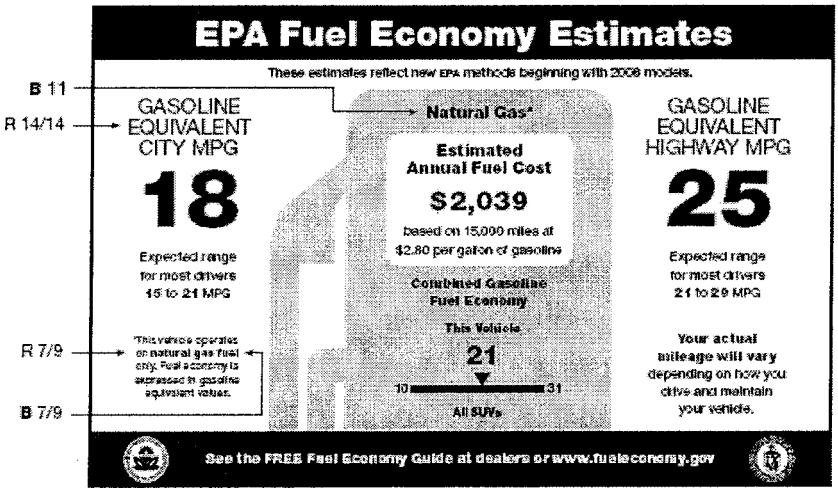
Alternative Fuel Vehicle: Natural Gas

BASIC FUEL ECONOMY LABEL

Set all copy in either the Helvetica or Arial font family — do not mix.
Use only Regular/Roman (R) and **Black** weights (**B**) — not bold, thin, italic or other font styles.

font size

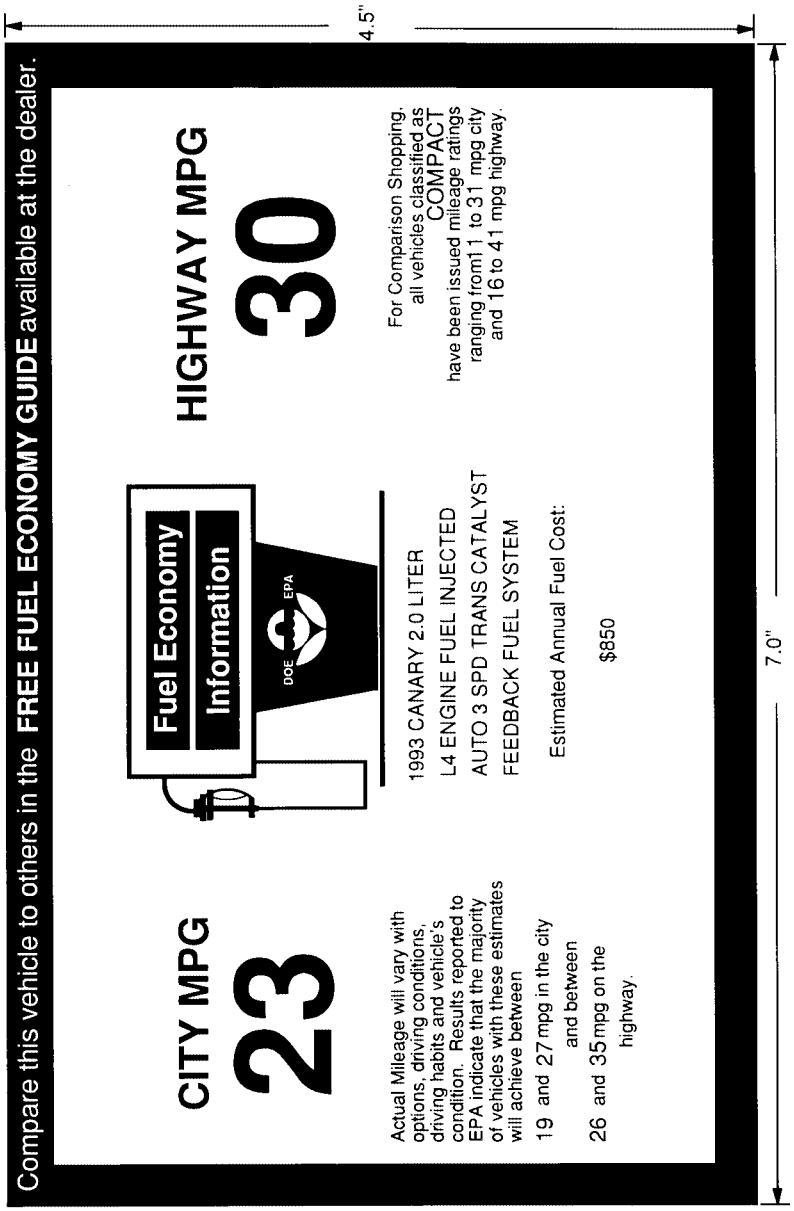
font weight → R 9/12 ← line spacing, if applicable



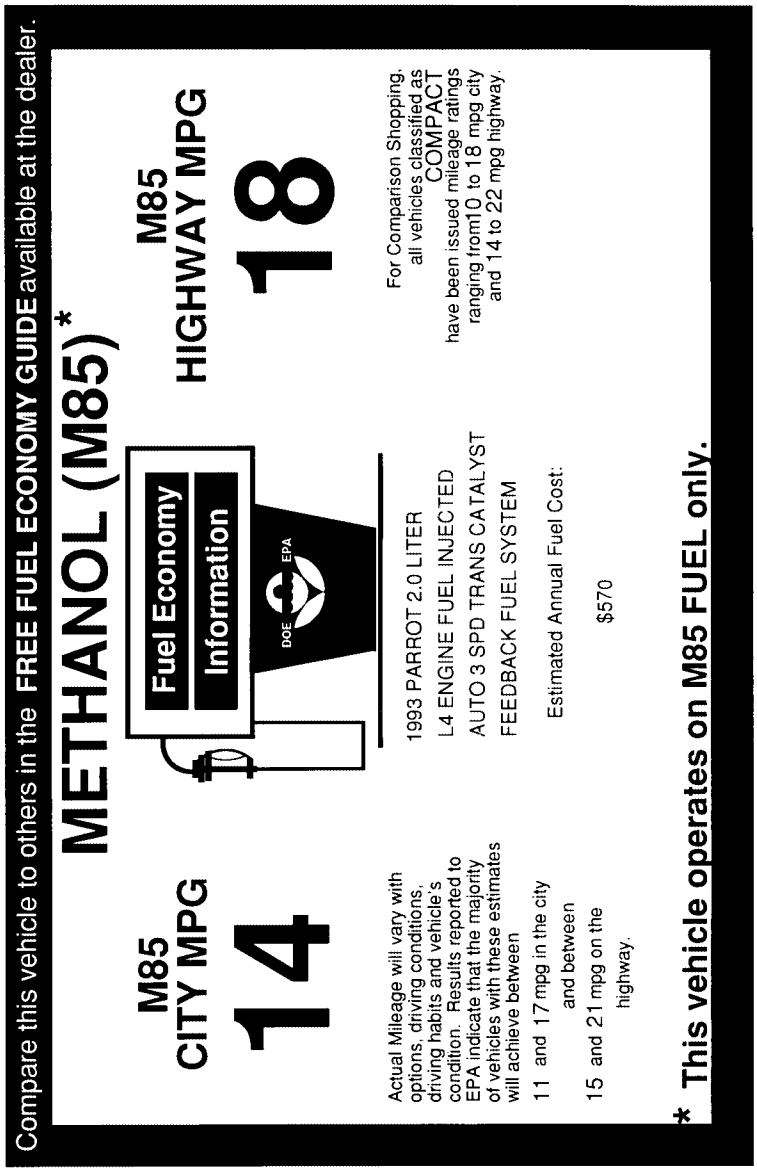
[71 FR 77965, Dec. 27, 2006]

APPENDIXES VI–VII TO PART 600
[RESERVED]

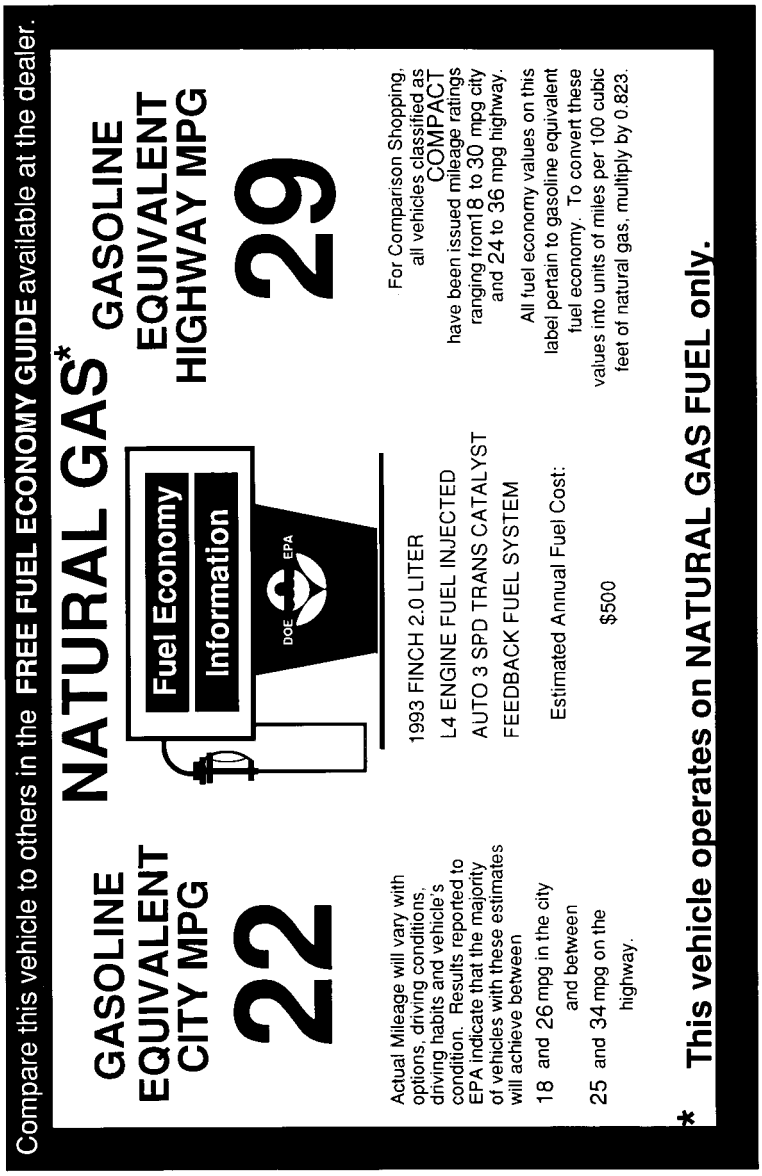
APPENDIX VIII TO PART 600—FUEL ECONOMY LABEL FORMATS



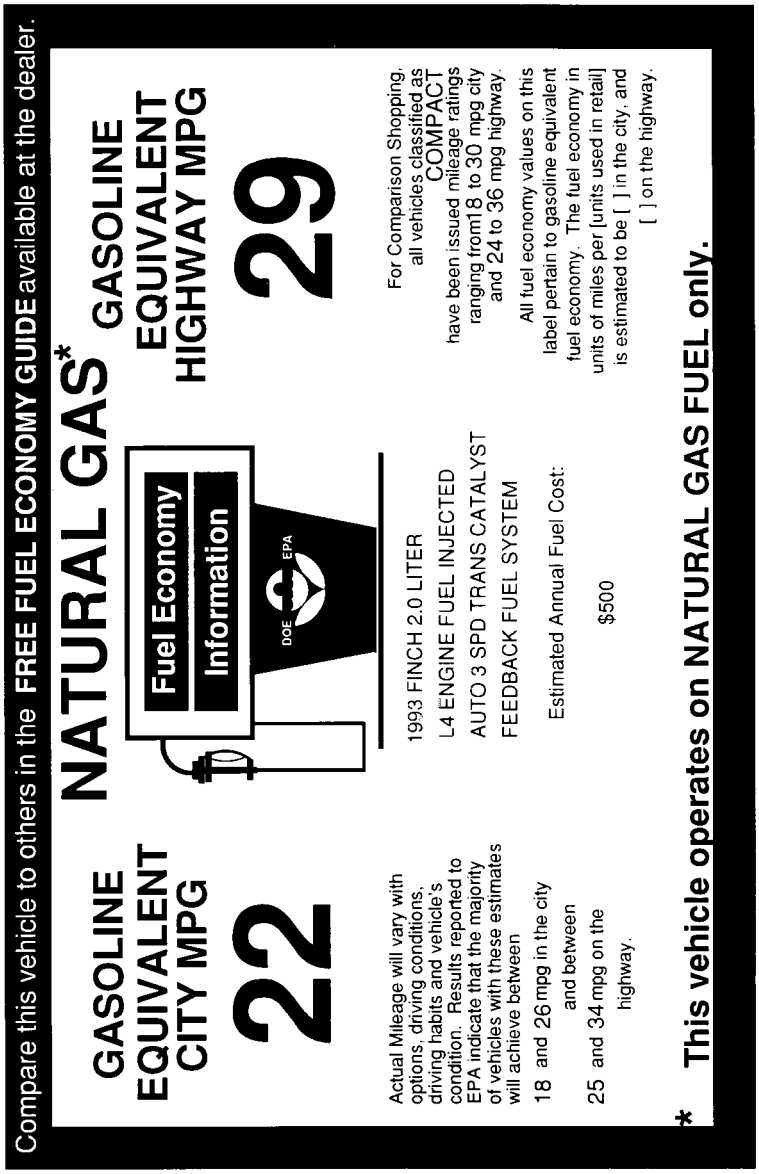
a. Gasoline-fueled vehicle label



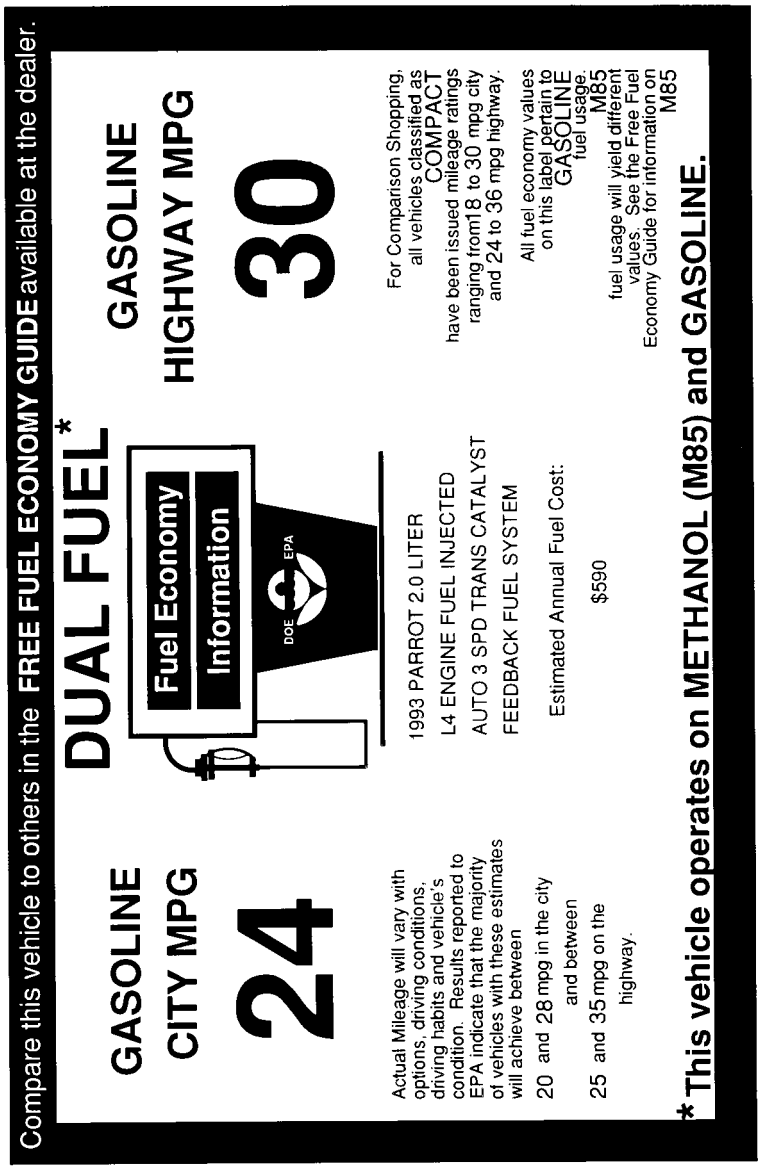
b. Dedicated M85-fueled vehicle label



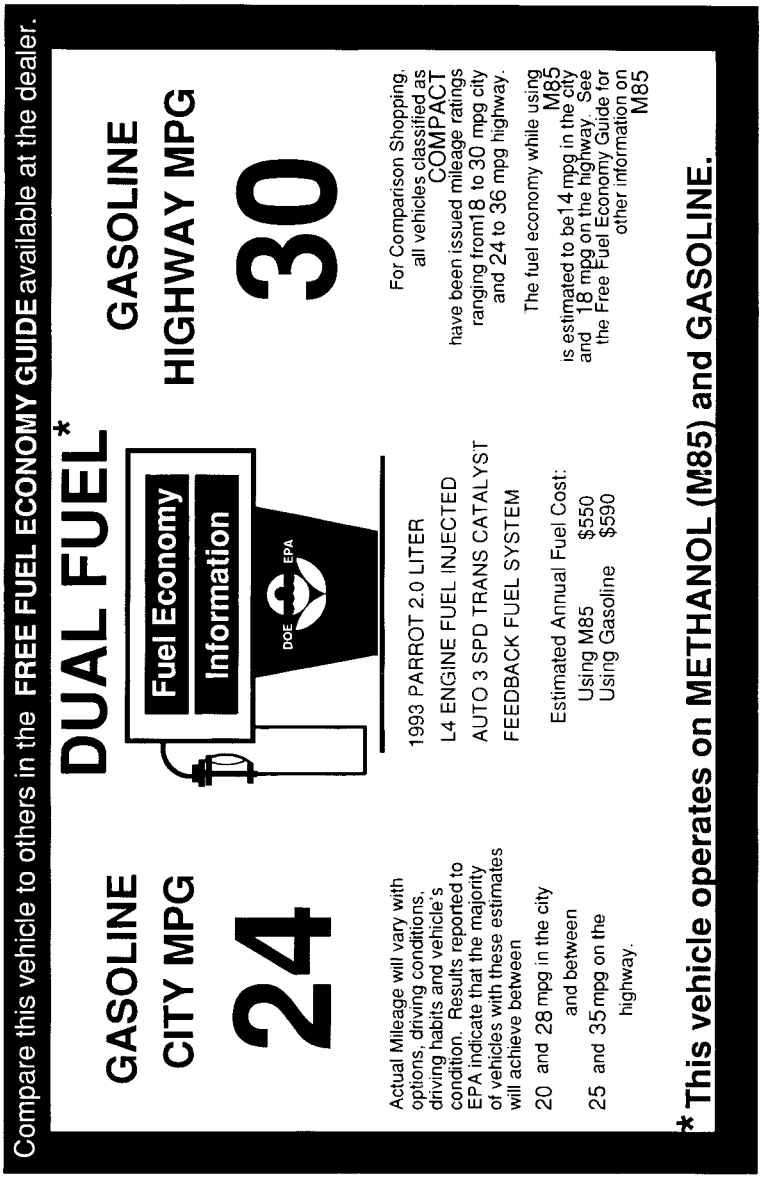
c. Dedicated natural gas-fueled vehicle label



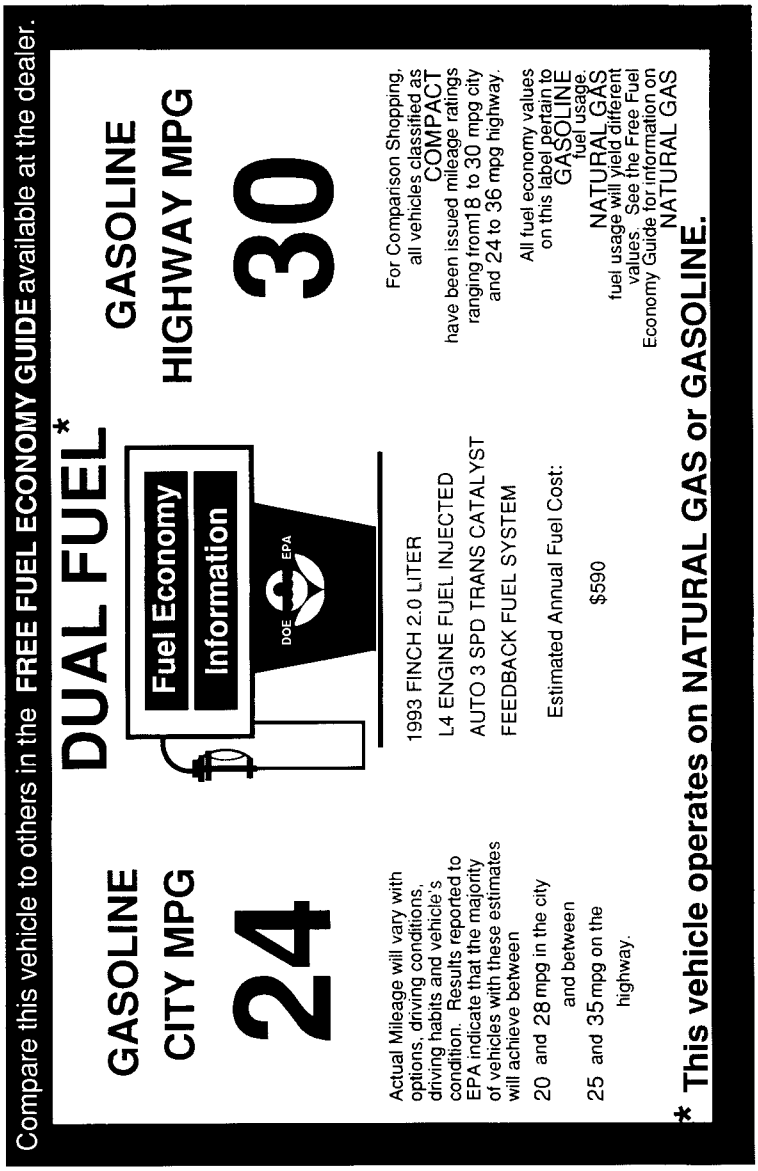
d. Dedicated natural gas-fueled vehicle label - optional



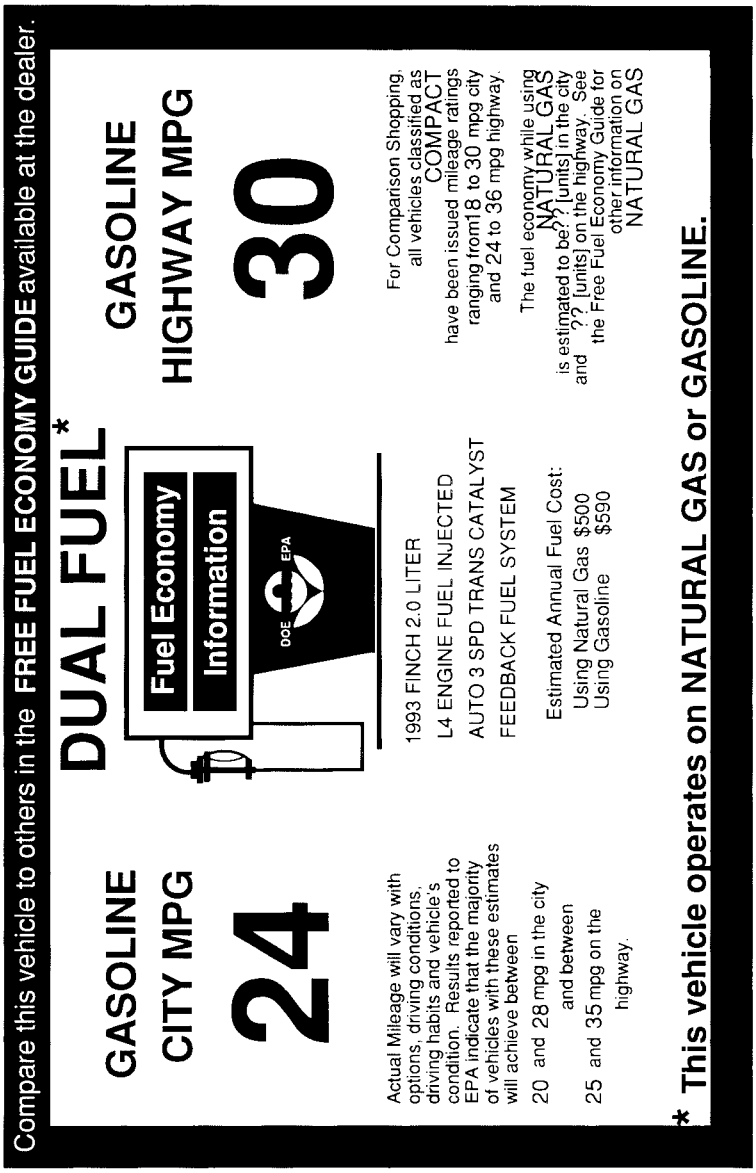
e. Methanol dual fuel vehicle label



f. Methanol dual fuel vehicle label - optional



g. Natural gas dual fuel vehicle label



h. Natural gas dual fuel vehicle label - optional

[59 FR 39661, Aug. 3, 1994]