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MOTOR GASOLINES, WINTER 1981-82

By

Ella Mae Shelton

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Date Published—July 1982

Bartlesville Energy Technology Center
U.S. Department of Energy
Bartlesville, Oklahoma

UNITED STATES DEPARTMENT OF ENERGY

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Paper copy:	\$9.00
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MOTOR GASOLINES, WINTER 1981-82

By

Ella Mae Shelton¹

ABSTRACT

Analytical data for 905 samples of motor gasoline, were collected from service stations throughout the country and were analyzed in the laboratories of various refiners, motor manufacturers, and chemical companies. The data were submitted to the Bartlesville Energy Technology Center for study, necessary calculations, and compilation under a cooperative agreement between the Bartlesville Energy Technology Center (BETC) and the American Petroleum Institute (API). The samples represent the products of 30 companies, large and small, which manufacture and supply gasoline. These data are tabulated by groups according to brands (unlabeled) and grades for 17 marketing districts into which the country is divided. A map included in this report, shows marketing areas, districts and sampling locations. The report also includes charts indicating the trends of selected properties of motor fuels since winter 1959-60 survey for the leaded gasolines, and since winter 1979-80 survey for the unleaded gasolines. Sixteen octane distribution percent charts for areas 1, 2, 3, and 4 for unleaded antiknock index (R+M)/2 below 90.0, unleaded antiknock index (R+M)/2 90.0 and above, leaded antiknock index (R+M)/2 below 93.0, and leaded antiknock index (R+M)/2 93.0 and above grades of gasoline are presented in this report. The antiknock (octane) index (R+M)/2 averages of gasoline sold in this country were 87.4 for unleaded below 90.0, 91.7 for unleaded 90.0 and above, and 88.9 for leaded below 93.0. Only one sample was reported as 93.0 for leaded gasolines with an antiknock index (R+M)/2 93.0 and above.

¹ Statistical Assistant.

INTRODUCTION

The properties of motor fuels sold through service stations in the United States are reported in accordance with a cooperative agreement between the American Petroleum Institute and the Bartlesville Energy Technology Center of the United States Department of Energy. By agreement with the American Petroleum Institute, identification of the source of data is confidential.

This report presents analytical data for 905 samples that represent the products of 30 companies. Company representatives collected and analyzed the samples during December 1981, and January and February 1982. As in previous surveys, the gasoline data in this survey include those from both large and small suppliers. Laboratories of various refiners, motor manufacturers, and chemical companies obtained and submitted the data to the Bartlesville Energy Technology Center for study, calculations, and compilation. Motor-gasoline survey reports published since 1971 are listed on page 7.

Analytical data required for a complete gasoline analysis were not available for many of the samples. Tests in this category, the number of samples available and used in this report, and the percent of the total samples represented for that test include the following:

<u>Test</u>	<u>Number of samples used</u>	<u>Percent of total samples</u>
Gravity	861	95.1
Sulfur content	879	97.1
Lead content	636	70.3
Vapor pressure	903	99.8
Distillation	905	100.0
Benzene	341	37.7

SUMMARY

The characteristics of motor gasolines for winter 1981-82 are summarized in Table 1, and those for winter 1980-81 are shown in Table 2 for comparison. Trend charts of certain characteristics of unleaded antiknock (R+M)/2 below 90.0 grade of gasoline are plotted beginning with winter 1979-80 survey data for Figure 1, and trends of certain characteristics of unleaded antiknock (R+M)/2 90.0 and above grade of gasoline are plotted beginning with winter 1979-80 survey data for Figure 2.

Figure 3 shows trend data of certain characteristics of leaded (regular) grade gasolines from winter 1959-60 through winter 1981-82 and shows the leaded antiknock (R+M)/2 below 93.0 grade gasoline beginning with winter 1980-81. Trend data for the more important characteristics for leaded (premium) grade gasolines from winter 1959-60 through winter 1981-82, and for leaded antiknock (R+M)/2 93.0 and above grade gasoline beginning with winter 1980-81 are shown in Figure 4.

The following data show trends of national average octane numbers for the last four gasoline surveys:

Grades of Motor Gasoline	Semi-annual Report Octane Number			
	Summer 1980	Winter 1980-81	Summer 1981	Winter 1981-82
<u>ASTM Methods</u>				
<u>Unleaded, (R+M)/2 below 90.0</u>				
Research	92.1	91.9	91.9	91.8
Motor	83.4	83.3	83.0	82.9
(R+M)/2	87.8	87.6	87.4	87.4
<u>Unleaded, (R+M)/2 90.0 and above</u>				
Research	96.7	96.1	96.3	96.6
Motor	86.4	86.5	86.2	86.8
(R+M)/2	91.6	91.4	91.3	91.7
<u>Leaded, (R+M)/2 below 93.0</u>				
Research	92.6	92.8	92.8	92.7
Motor	85.2	85.4	85.1	85.1
(R+M)/2	88.9	89.1	89.0	88.9
<u>Leaded, (R+M)/2 93.0 and above</u>				
Research	97.0	97.3	-	² 98.1
Motor	88.6	89.2	-	² 87.8
(R+M)/2	92.8	93.3	-	² 93.0

Table 3 shows properties of unleaded (divided into two separate groups, (R+M)/2 antiknock data below 90.0, and (R+M)/2 antiknock data 90.0 and above), and properties of leaded (divided into two separate groups, (R+M)/2 antiknock data below 93.0, and (R+M)/2 antiknock data 93.0 and above), grades of gasolines sold during the winter 1981-82 in each of the 17 marketing districts.

Table 4 shows average data from each district and gives the national average for all properties for the four categories of gasoline, unleaded (R+M)/2 below 90.0, unleaded (R+M)/2 90.0 and above, leaded (R+M)/2 below 93.0, and leaded (R+M)/2 93.0 and above.

Table 5 lists locations and number of samples represented in each area and district for all samples in this report.

² Data for one sample.

DISCUSSION OF DATA

Terms used in the surveys have the following meanings:

Area: Selected by elevation and location in the United States. The areas are divided as: Area 1 - Eastern and Gulf Coast states, Area 2 - Central states, Area 3 - Mountain states, including elevations above 3,000 feet, and Area 4 - Western states. The areas are given in Table 5 and indicated by a broken line in Figure 21.

District: The designation of a marketing area for collecting samples and data. The present arrangement of 17 districts, developed by the CFR Committee³, was selected with reference to the specifications on motor gasolines, refinery locations, population centers, and arteries of commerce such as navigable rivers. The states or parts of states in each district are indicated in the headings of Table 3 and are shown in Figure 21.

Brand: The gasoline sold within a given price group and by a given trade name.

Item: The index number assigned to a given brand in a given district. The data for each item represent the average of those samples submitted for that brand in that district. The number of samples represented follows the item number.

Sample: The supply of gasoline obtained at the service station, analyzed and furnished by the supplier.

Table 3 presents the following data of the motor fuels collected and arranged by districts: gravity in degrees API, sulfur, gum, benzene, lead (for leaded data $(R+M)/2$ below 93.0 and $(R+M)/2$ 93.0 and above grades by ASTM D2547⁴ or ASTM D3341⁵), research- and motor-method octane numbers, the calculated property of the sum of research and motor octane numbers divided by two [antiknock (octane) index], Reid vapor pressure, calculated data for vapor-liquid ratio of 20, and distillation characteristics. The tests were made according to American Society for Testing and Materials standards⁶.

³ Coordinating Fuel and Equipment Research Committee (formerly the Coordinating Fuel Research Committee) of the Coordinating Research Council, Inc. From 1935 to 1948 the motor-gasoline surveys were conducted under a cooperative agreement between the Coordinating Research Council and the Bureau of Mines.

⁴ American Society for Testing and Materials, Standard Test Method for Lead in Gasoline, Volumetric Chromate Method (D2547): 1981 Annual Book of ASTM Standards, Part 24, pp. 466-470.

⁵ -----, Standard Test Method for Lead in Gasoline - Iodine Monochloride Method (D3341): 1981 Annual Book of Standards, Part 25, pp. 243-246.

⁶ -----, 1981 Annual Book of ASTM Standards, Parts 23, 24, and 25 Petroleum Products and Lubricants (I), (II), and (III), Philadelphia, PA, pp. 984, 944, and 1424, respectively.

Corrosion tests results are not included in the district tables as all the reported numbers are "1", according to the corrosion scale given in Table 1 of ASTM D130⁷.

Gum test data are reported to the nearest whole number. The distillation temperatures, corrected to barometric pressure at 760 mm Hg, are those for percent evaporated.

Average values follow the tabulated data in Table 3 for the respective grades of fuel shown in each district. The averages, minimums, and maximums of the various properties were computed on individual samples. The items are arranged randomly by brands.

The district averages from Table 3 are shown in Table 4 with the number of brands and number of samples for unleaded antiknock index below 90.0, unleaded antiknock index 90.0 and above, leaded antiknock index below 93.0, and leaded antiknock index 93.0 and above grades of gasoline in each district. The national averages for each of the properties of fuels sold in each of the 17 districts are given at the end of Table 4.

Figures 1 and 2 illustrate trends in the national averages of certain properties of unleaded antiknock index below 90.0, and unleaded antiknock index 90.0 and above grades of gasoline respectively since winter 1979-80. Figures 3 and 4 show trends in the national average of certain properties of leaded antiknock index below 93.0, and leaded antiknock index 93.0 and above grades of gasoline, respectively, since winter 1959-60. This report presents trend data of the calculated antiknock index $(R+M)/2$ for leaded gasoline data since 1970. Averages for the winter surveys are plotted on the lines that represent the years and the averages for the summer survey data are plotted between the lines. Octane-number data-points for successive surveys are connected, but the data for Reid vapor pressure and distillation temperatures are plotted separately for summer and winter surveys. Charts that show plots of these properties from 1935 (except winter 1941-42 and summer 1942) are presented in the survey report on motor gasolines for winter 1964-65 and preceding reports⁸.

Figures 5 through 20 show the research-method, motor-method, and antiknock $(R+M)/2$ octane distribution percent curves for areas 1, 2, 3, and 4 for unleaded antiknock index below 90.0, unleaded antiknock index 90.0 and above, leaded antiknock index below 93.0, and leaded antiknock index 93.0 and above grades of gasoline.

The city locations, areas, districts, and number of samples of gasoline represented are listed in Table 5 and shown on the map in Figure 21. The locations are named for the principal cities in the respective vicinities, and include suburbs and adjacent communities. The area of the circle at

⁷ American Society for Testing and Materials, Standard Method for Detection of Copper Corrosion From Petroleum Products by the Copper Strip Tarnish Test (D130): 1981 Annual Book of ASTM Standards, Part 23, pp. 104-110.

⁸ Blade, O. C., Motor Gasolines, Winter 1964-65. Bureau of Mines Petroleum Products Survey No. 40, 38 pp. (In cooperation with the American Petroleum Institute.)

each location is proportional to the number of samples obtained. The summary at the end of Table 5 lists by district, the number of locations, samples, and the percentages of the latter based on the total reported.

This report does not discuss the significance of the data presented. Reference may be made to the ASTM specification⁹ for motor gasoline and its appendixes, "Significance of ASTM Specifications for Motor Gasoline," at a technical library.

⁹ American Society for Testing and Materials, Standard Specifications for Automotive Gasoline (D439): 1981 Annual Book of ASTM Standards, Part 23, pp. 227-243.

LIST OF MOTOR-GASOLINE SURVEY REPORTS, 1971-1982

<u>Author</u>	<u>Season and Year</u>	<u>PPS Report No.</u>	<u>Published</u>	<u>No. of Pages</u>
In cooperation with the American Petroleum Institute				
Shelton, Ella Mae	Winter 1971-72	75	June 1972	53
Do.	Summer 1972	78	Jan. 1973	53
Do.	Winter 1972-73	80	June 1973	60
Do.	Summer 1973	83	Jan. 1974	59
Do.	Winter 1973-74	85	June 1974	59
Do.	Summer 1974	88	Jan. 1975	62
Do.	Winter 1974-75	75/1	June 1975	71
Do.	Summer 1975	76/1	Jan. 1976	72
Do.	Winter 1975-76	76/3	June 1976	72
Do.	Summer 1976	77/1	Jan. 1977	78
Do.	Winter 1976-77	77/3	June 1977	89
Do.	Summer 1977	78/1	Jan. 1978	89
Do.	Winter 1977-78	78/3	July 1978	78
Do.	Summer 1978	79/1	Jan. 1979	77
Do.	Winter 1978-79	79/3	July 1979	78
Do.	Summer 1979	80/1	Feb. 1980	76
Do.	Winter 1979-80	80/3	July 1980	67
Do.	Summer 1980	81/1	Feb. 1981	67
Do.	Winter 1980-81	81/3	July 1981	64
Do.	Summer 1981	82/1	Mar. 1982	64
Do.	Winter 1981-82	This report

FIGURE 1. - Trends of certain characteristics of unleaded antiknock (R+M)/2 below 90.0 grade of gasoline.

FIGURE 2. - Trends of certain characteristics of unleaded antiknock (R+M)/2 90.0 and above grade of gasoline.

FIGURE 3. - Trends of certain characteristics of leaded (regular) grade gasoline through summer 1980; leaded antiknock (R+M)/2 below 93.0 grade gasoline beginning winter 1980-81.

FIGURE 4. - Trends of certain characteristics of leaded (premium) grade gasoline through summer 1980; leaded antiknock (R+M)/2 93.0 and above grade gasoline beginning winter 1980-81.

FIGURE 5. - Area 1: Unleaded motor gasoline antiknock index (R+M)/2
below 90.0 octane number distributions.

FIGURE 6. - Area 1: Unleaded motor gasoline antiknock index (R+M)/2 90.0 and above octane number distributions.

FIGURE 7. - Area 1: Leaded motor gasoline antiknock index (R+M)/2 below 93.0 octane number distributions.

FIGURE 8. - Area 1: Leaded motor gasoline antiknock index (R+M)/2 93.0 and above octane number distributions.

FIGURE 9. - Area 2: Unleaded motor gasoline antiknock index (R+M)/2 below 90.0 octane number distributions.

FIGURE 10. - Area 2: Unleaded motor gasoline antiknock index (R+M)/2 90.0 and above octane number distributions.

FIGURE 11. - Area 2: Leaded motor gasoline antiknock index (R+M)/2 below 93.0 octane number distributions.

FIGURE 12. - Area 2: Leaded motor gasoline antiknock index (R+M)/2 93.0 and above octane number distributions.

FIGURE 13: - Area 3: Unleaded motor gasoline antiknock index (R+M)/2 below 90.0 octane number distributions.

FIGURE 14. - Area 3: Unleaded motor gasoline antiknock index (R+M)/2
90.0 and above octane number distributions.

FIGURE 15. - Area 3: Leaded motor gasoline antiknock index (R+M)/2 below 93.0 octane number distributions.

FIGURE 16. - Area 3: Leaded motor gasoline antiknock index (R+M)/2
93.0 and above octane number distributions.

FIGURE 17. - Area 4: Unleaded motor gasoline antiknock index (R+M)/2 below 90.0 octane number distributions.

FIGURE 18. - Area 4: Unleaded motor gasoline antiknock index (R+M)/2 90.0 and above octane number distributions.

FIGURE 19. - Area 4: Leaded motor gasoline antiknock index (R+M)/2 below 93.0 octane number distributions.

FIGURE 20. - Area 4: Leaded motor gasoline antiknock index (R+M)/2 93.0 and above octane number distributions.

TABLE 1. - Summary of values, motor gasoline survey, winter 1981-82

Test	ASTM method	Grades of motor gasolines			
		Unleaded Average		Leaded Average	
		(R+M)/2 below 90.0	(R+M)/2 90.0 and above	(R+M)/2 below 93.0	(R+M)/2 93.0 and above
Gravity, °API	D287	61.0	58.6	62.5	62.3
Corrosion, No.	D130	1	1	1	1
Sulfur content, wt %	D1266	0.026	0.013	0.037	0.066
Gum, mg/100 ml	D381	1	1	1	-
Benzene, vol %	D3606	1.19	0.89	1.36	-
Lead, g/gal		-	-	0.99	0.95
Octane number, Research	D2699	91.8	96.6	92.7	98.1
Octane number, Motor	D2700	82.9	86.8	85.1	87.8
Antiknock index (R+M)/2		87.4	91.7	88.9	93.0
Reid vapor pressure, lb	D323	13.1	12.7	12.9	11.1
Vapor-liquid ratio of 20, °F	D439	119	122	118	129
Distillation D86					
Temp, °F					
IBP		77	78	79	81
5% Evaporated		89	90	93	88
10% Do.		105	108	107	115
20% Do.		129	136	128	141
30% Do.		157	168	151	167
50% Do.		212	222	200	215
70% Do.		264	262	256	261
90% Do.		337	323	336	326
95% Do.		369	357	371	365
End point		409	402	411	405
Residue, vol %		1.1	1.1	1.2	1.3
Loss, vol %		2.4	2.5	2.1	1.7

TABLE 2. - Summary of values, motor gasoline survey, winter 1980-81

Test	ASTM method	Grades of motor gasolines			
		Unleaded Average		Leaded Average	
		(R+M)/2 below 90.0	(R+M)/2 90.0 and above	(R+M)/2 below 93.0	(R+M)/2 93.0 and above
Gravity, °API	D287	61.1	58.1	62.3	58.4
Corrosion, No.	D130	1	1	1	1
Sulfur content, wt %	D1266	0.026	0.012	0.042	0.016
Gum, mg/100 ml	D381	1	1	1	1
Benzene, vol %	D3606	1.01	1.21	1.00	1.08
Lead, g/gal		-	-	0.94	1.49
Octane number, Research	D2699	91.9	96.1	92.8	97.3
Octane number, Motor	D2700	83.3	86.5	85.4	89.2
Antiknock index (R+M)/2		87.6	91.4	89.1	93.3
Reid vapor pressure, lb	D323	12.7	12.6	12.4	11.4
Vapor-liquid ratio of 20, °F	D439	120	123	120	127
Distillation D86					
Temp, °F					
IBP		82	83	84	84
5% Evaporated		92	93	95	101
10% Do.		107	109	107	116
20% Do.		130	137	128	138
30% Do.		156	169	151	162
50% Do.		211	220	200	208
70% Do.		264	260	256	253
90% Do.		333	320	334	324
95% Do.		362	350	365	360
End point		408	405	413	403
Residue, vol %		1.0	1.0	1.0	1.3
Loss, vol %		3.1	3.6	2.7	1.6

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS

DIST. 1 NORTHEAST
MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED										RES %	LOSS %	
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP			
1	1	61.0	0.030	-	-	93.1	82.3	87.7	12.9	122	79	91	104	128	158	232	292	337	358	386	1.0	2.0	
2	1	65.7	.002	-	-	92.7	82.7	87.7	13.8	117	76	86	103	126	152	216	273	358	382	420	1.5	2.5	
3	1	62.4	.060	1	2.00	91.7	83.0	87.4	14.3	117	86	96	105	127	159	221	269	342	370	407	1.0	3.5	
4	1	59.0	.005	-	-	92.2	83.3	87.8	14.0	114	76	85	97	117	143	212	276	333	355	401	1.0	2.0	
5	1	60.5	.026	-	-	90.9	82.3	85.6	13.1	119	79	90	103	127	154	213	272	345	376	420	1.5	2.0	
6	1	62.3	.021	-	-	92.8	82.5	87.7	13.5	116	78	88	102	122	147	207	259	336	368	406	1.1	2.9	
7	1	60.5	.060	-	-	91.4	81.9	85.7	13.4	118	70	86	105	132	161	211	255	333	376	402	.7	3.3	
AVERAGE		61.6	.029	1	2.00	92.1	82.6	87.4	13.6	118	78	89	103	126	153	216	271	341	369	406	1.1	2.6	
MINIMUM		59.0	.002	1	2.00	90.9	81.9	85.6	12.9	114													
MAXIMUM		65.7	.060	1	2.00	93.1	83.3	87.8	14.3	122													
SAMPLES		7																					

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R-M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D237	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED										RES %	LOSS %	
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP			
8	1	59.8	0.005	-	-	97.5	86.3	91.9	12.7	123	85	95	110	137	167	222	265	322	347	390	1.0	2.0	
9	1	58.4	.002	-	-	96.6	87.8	92.2	14.2	117	70	80	101	137	174	224	260	324	361	388	.6	2.9	
10	1	60.0	.013	-	-	96.9	87.2	92.1	13.9	113	77	87	97	113	163	211	262	306	331	367	.9	1.6	
11	1	63.2	.020	-	-	94.3	87.3	90.8	13.1	123	75	83	104	141	180	234	268	341	375	418	1.0	3.0	
12	1	60.1	.011	-	-	97.9	86.7	92.3	13.3	117	76	87	101	124	152	212	254	311	337	386	1.0	2.0	
13	1	54.1	.013	-	-	98.8	87.7	92.3	13.7	116	74	79	92	128	160	219	257	316	347	377	.9	3.1	
AVERAGE		59.3	.011	-	-	97.0	87.2	92.1	13.5	118	76	85	101	130	166	220	261	320	350	388	.9	2.4	
MINIMUM		54.1	.002	-	-	94.3	86.3	90.8	12.7	113													
MAXIMUM		63.2	.020	-	-	98.8	87.8	92.3	14.2	123													
SAMPLES		6																					

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 1 NORTHEAST--CONTINUED
MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED												
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %	
14	1	60.6	0.030	1	2.60	1.32	92.6	86.1	89.4	13.8	116	86	98	110	128	150	200	262	350	386	414	1.0	3.0	
15	1	64.2	.002	-	-	1.51	93.9	85.6	89.8	13.2	115	79	92	104	122	141	188	255	327	353	381	1.1	1.4	
16	1	64.4	.010	-	-	1.56	94.4	84.5	89.5	13.0	114	78	89	102	118	137	187	252	325	346	374	1.0	2.0	
17	1	60.6	.050	-	-	.41	94.0	83.7	88.9	12.5	117	77	93	107	123	143	189	247	330	336	412	1.5	1.5	
18	1	61.3	.091	-	-	1.43	92.8	85.9	89.4	13.5	119	85	95	109	134	157	210	264	349	377	411	1.0	2.0	
19	1	60.8	.047	-	-	.93	93.8	84.7	89.3	13.1	120	88	98	111	133	157	209	263	325	368	408	1.0	1.0	
20	1	66.3	.043	-	-	2.06	92.4	87.0	89.7	12.9	114	80	93	104	121	138	181	233	321	361	398	.9	2.1	
AVERAGE		62.6	.039	1	2.60	1.32	93.4	85.4	89.4	13.1	116	82	94	107	126	146	195	254	334	361	400	1.1	1.9	
MINIMUM		60.6	.002	1	2.60	.41	92.4	83.7	88.9	12.5	114													
MAXIMUM		66.3	.091	1	2.60	2.06	94.4	87.0	89.8	13.8	120													
SAMPLES		7																						

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED												
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES	LOSS	

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 2 MID-ATLANTIC COAST
R.I., CONN., N.J., DEL., MD., VA., CENTRAL AND SOUTHERN N.Y., AND EASTERN PA.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM C1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86																RES %	LOSS %		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)																			
											PERCENT EVAPORATED												EP							
											IBP	5	10	20	30	50	70	90	95											
21	1	62.9	0.010	1	0.60	93.0	83.0	88.0	15.6	108	80	87	96	113	134	199	270	356	391	428	1.0	2.5								
22	1	56.7	.010	2	1.30	93.4	84.0	88.7	13.8	121	85	99	110	132	157	230	288	341	360	414	1.0	1.5								
23	4	61.9	.004	1	1.54	91.3	82.8	87.1	14.3	113	76	87	100	122	146	200	256	329	365	358	1.0	3.3								
24	3	61.1	.025	0	.90	91.8	82.6	87.2	13.3	116	78	89	100	121	145	202	263	347	380	426	1.2	2.6								
25	7	62.7	.020	1	.70	92.6	82.4	87.5	13.2	116	79	90	103	123	146	199	252	316	344	387	1.1	2.2								
26	2	62.8	.025	1	1.25	92.2	83.2	87.7	12.7	115	81	89	101	115	132	187	255	333	355	407	1.0	3.5								
27	6	62.0	.021	1	.67	92.2	83.3	87.8	13.9	114	77	87	102	118	144	207	269	351	386	417	1.2	2.3								
28	6	60.2	.027	1	1.06	92.0	82.7	87.4	13.0	117	72	88	100	122	147	208	265	345	377	415	1.2	1.7								
29	2	60.9	.030	0	1.40	92.0	82.5	87.3	13.4	121	86	98	108	130	160	221	273	343	376	422	1.0	2.8								
30	7	60.5	.031	3	1.28	92.1	82.7	87.5	13.0	119	74	90	104	126	152	212	268	341	371	416	1.1	2.2								
31	5	61.2	.022	0	1.07	91.5	82.9	87.2	12.9	118	75	90	103	124	149	208	266	346	377	409	1.2	1.8								
32	5	62.2	.030	2	.50	93.1	83.0	88.0	13.0	119	79	93	105	127	153	214	266	327	356	391	.9	1.6								
33	3	62.8	.038	2	.56	91.4	82.6	87.0	12.7	120	77	94	105	129	156	210	264	344	381	422	1.2	1.8								
34	2	60.3	.025	2	-	91.6	82.9	87.3	12.2	124	79	99	112	135	162	218	271	351	385	422	1.1	1.1								
AVERAGE		61.5	.024	1	.96	92.1	82.8	87.5	13.3	117	77	90	103	124	149	207	264	339	370	409	1.1	2.2								
MINIMUM		56.7	.001	0	.30	90.6	81.3	86.5	10.4	103																				
MAXIMUM		66.9	.090	6	1.90	94.0	84.1	88.7	15.7	130																				
SAMPLES		54																												

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86																RES %	LOSS %		
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)																			
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED																			
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP										
35	2	61.2	0.025	1	0.85	96.1	86.5	91.3	11.8	124	83	97	108	129	153	216	259	330	349	397	1.0	2.5								
36	3	59.5	.002	0	1.47	96.1	87.2	91.7	14.1	116	78	89	102	128	161	221	268	332	361	407	1.3	2.5								
37	3	63.0	.019	1	.40	94.5	87.3	90.9	14.5	120	78	90	110	144	181	234	268	338	370	413	1.0	2.7								
38	5	59.6	.026	1	.62	96.6	86.9	91.8	12.4	122	77	91	106	128	155	213	251	319	356	400	.8	1.9								
39	1	62.8	.010	0	.40	94.5	86.7	90.6	15.2	119	80	95	110	144	190	237	269	327	367	423	1.0	2.0								
40	6	56.9	.013	0	.55	98.8	87.2	93.0	13.0	120	75	91	105	130	158	214	243	315	352	392	1.1	1.3								
41	5	59.8	.011	1	.54	96.7	85.7	91.2	13.0	119	79	91	103	128	158	212	262	319	344	389	1.1	2.7								
42	7	59.2	.016	1	.66	97.1	87.2	92.2	13.2	115	78	89	99	115	135	211	265	312	338	389	1.0	1.6								
43	3	60.3	.011	1	.50	97.0	86.9	91.9	12.3	122	79	94	105	130	158	218	258	317	344	398	1.1	2.9								
44	3	56.6	.016	1	.94	96.3	86.1	91.2	12.8	121	82	93	103	127	157	223	267	337	375	423	1.1	2.6								
AVERAGE		59.4	.015	1	.68	96.8	86.8	91.8	13.1	119	78	91	104	128	156	217	259	322	352	399	1.0	2.1								
MINIMUM		55.5	.001	0	.20	93.8	84.2	90.2	10.3	106																				
MAXIMUM		63.6	.088	2	1.47	99.5	88.1	93.5	15.5	130																				
SAMPLES	38																													

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 2 MID-ATLANTIC COAST--CONTINUED
R.I., CONN., N.J., DEL., MD., VA., CENTRAL AND SOUTHERN N.Y., AND EASTERN PA.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F.	DISTILLATION, ASTM D86													RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)														
												IBP	PERCENT EVAPORATED									EP				
													5	10	20	30	50	70	90	95						
45	4	62.4	0.010	1	1.03	0.94	92.5	86.1	89.3	14.2	110	78	88	98	116	137	189	262	344	378	412	1.2	2.6			
46	2	62.7	0.041	5	-	1.63	93.3	85.4	89.4	12.2	120	81	97	109	128	148	196	256	342	377	420	.9	1.8			
47	5	62.6	0.046	1	1.45	1.11	93.2	85.4	89.3	11.5	121	80	95	108	126	146	190	253	336	367	412	1.1	1.7			
48	3	61.7	0.049	2	.59	1.33	92.2	85.5	89.1	11.8	126	83	99	112	139	168	220	272	347	382	424	1.2	2.1			
49	5	63.4	0.026	2	.82	1.24	93.0	85.7	89.4	13.7	114	80	93	101	119	140	193	259	348	384	421	1.1	1.5			
50	5	63.1	0.044	0	1.29	1.36	92.9	85.4	89.1	12.6	117	78	95	106	124	143	188	248	334	367	412	1.0	1.3			
51	2	62.0	0.045	2	2.15	1.34	92.8	85.4	89.1	13.1	119	84	96	108	131	157	207	261	336	358	418	1.0	2.5			
52	5	62.5	0.042	0	.60	.73	93.9	83.7	88.8	12.6	120	78	96	107	128	152	205	260	320	359	395	1.2	1.1			
53	2	65.0	0.010	1	.90	.90	93.2	86.0	89.6	12.1	117	82	96	106	122	139	175	236	320	353	397	1.0	2.5			
54	1	64.2	0.010	0	.70	1.50	93.0	85.1	89.1	14.8	110	82	92	100	117	138	196	270	346	390	436	1.0	2.0			
55	3	62.6	0.040	2	1.17	1.40	92.6	85.9	89.3	12.7	118	86	95	105	125	148	200	257	336	371	416	1.2	2.4			
56	6	63.2	0.045	1	1.17	1.44	92.9	85.5	89.2	12.7	116	77	91	104	123	144	192	251	334	372	414	1.1	1.5			
57	7	65.5	0.035	1	.62	1.19	93.0	85.6	89.3	12.5	118	79	94	107	126	146	191	241	313	348	392	1.3	1.7			
58	1	63.1	0.010	1	1.30	1.12	93.6	85.1	89.4	14.2	112	77	90	100	119	140	194	266	350	382	416	1.0	3.0			
AVERAGE		63.3	0.036	1	1.04	1.21	93.0	85.4	89.2	12.7	117	80	94	105	125	146	195	254	334	368	410	1.1	1.8			
MINIMUM		60.3	0.002	0	.20	.38	91.8	83.1	88.2	9.4	107															
MAXIMUM		72.5	.120	5	3.30	2.53	94.7	86.7	89.9	15.5	135															

SAMPLES 51

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											RES %	LOSS %	
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				

NO SAMPLES

TABLE 5. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 3 SOUTHEAST
N.C., S.C., GA., FLA., ALA., AND EASTERN TENN.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86															RES %	LOSS %	
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)																	
											PERCENT EVAPORATED																	EP
											IBP	5	10	20	30	50	70	90	95									
59	5	59.5	0.023	-	-	92.0	82.6	87.3	12.6	120	77	90	104	127	155	216	277	358	390	417	1.3	1.6						
60	1	59.9	.021	-	-	92.0	82.9	87.5	13.3	118	79	95	105	127	150	208	276	353	387	428	1.0	2.0						
61	1	-	-	-	-	93.0	82.9	88.0	12.1	123	83	93	106	126	153	221	290	352	382	424	1.2	1.8						
62	1	-	-	-	-	92.0	82.2	87.1	11.0	128	84	96	111	136	163	218	274	350	386	414	1.2	1.8						
63	5	60.4	.023	-	-	91.6	83.0	87.3	12.5	122	76	92	106	133	162	216	264	338	379	415	1.3	1.5						
64	5	60.0	.032	2	-	91.7	82.9	87.3	12.2	123	77	92	108	133	163	217	268	340	373	415	1.0	2.0						
65	3	59.5	.002	-	-	92.0	83.3	87.7	13.1	117	76	90	105	127	151	199	262	345	377	424	1.4	2.0						
66	2	61.2	.050	0	2.55	91.3	83.0	87.1	12.9	123	86	99	112	136	166	219	267	342	367	416	1.0	2.3						
67	5	62.9	.034	-	-	92.5	82.8	87.7	13.3	117	73	87	102	125	150	206	261	330	360	389	1.2	1.8						
AVERAGE		60.5	.026	1	2.55	92.0	82.9	87.4	12.7	121	77	91	106	130	157	213	268	343	376	413	1.2	1.8						
MINIMUM		58.5	.001	0	2.40	89.9	82.0	86.5	10.7	110																		
MAXIMUM		70.0	.076	2	2.70	93.0	83.7	88.0	14.0	134																		
SAMPLES		28																										

SAMPLES 28

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											EP			
											PERCENT EVAPORATED														
											IBP	5	10	20	30	50	70	90	95						
68	5	56.4	0.012	-	-	98.9	87.1	93.0	12.4	122	77	92	107	133	162	216	244	312	351	390	1.0	2.0			
69	1	-	-	-	-	95.4	86.1	90.8	12.1	125	83	94	107	133	168	227	264	324	371	408	1.1	1.9			
70	3	56.7	.002	-	-	96.4	86.5	91.4	13.4	120	74	87	106	138	171	221	266	347	381	409	1.4	1.9			
71	1	-	-	-	-	98.1	87.2	92.7	9.7	139	87	105	126	158	189	225	258	318	348	386	1.2	1.8			
72	4	58.7	.010	-	-	96.1	86.7	91.4	12.4	124	77	89	107	139	175	226	268	327	358	389	1.2	2.3			
73	2	58.5	.011	-	-	97.4	86.5	92.0	12.9	115	75	88	97	111	129	213	272	307	330	368	1.1	.7			
74	5	60.7	.012	-	-	96.0	87.1	91.6	12.4	122	77	91	106	132	161	218	261	332	367	411	1.2	2.0			
AVERAGE		58.2	.010	-	-	97.0	86.8	91.9	12.4	122	77	91	107	134	164	220	260	325	359	396	1.2	1.9			
MINIMUM		53.1	.002	-	-	95.2	86.0	90.8	9.7	110															
MAXIMUM		62.9	.016	-	-	99.2	87.8	92.3	13.8	139															

SAMPLES 21

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82

AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 3 SOUTHEAST--CONTINUED

N.C., S.C., GA., FLA., ALA., AND EASTERN TENN.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM C1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM C2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)													
												PERCENT EVAPORATED													
												IBP	5	10	20	30	50	70	90	95	EP				
75	1	63.1	0.073	-	-	2.08	93.5	86.0	89.8	13.3	113	76	91	102	119	137	183	247	335	370	412	1.2	1.8		
76	5	63.9	.015	0	-	1.20	92.8	85.4	89.1	11.8	121	84	101	114	132	150	188	235	330	376	416	1.1	1.7		
77	5	61.5	.038	-	-	1.06	93.2	85.5	89.4	12.7	119	75	90	104	126	152	207	264	339	372	406	1.3	1.7		
78	6	60.0	.034	0	-	1.18	92.6	85.6	89.2	12.5	120	78	92	104	128	156	210	268	347	382	410	1.2	1.8		
79	3	64.1	.039	2	-	1.05	93.4	85.9	89.7	10.5	129	95	109	118	135	155	202	254	334	365	413	1.0	1.4		
80	3	60.5	.051	3	-	2.02	92.9	85.3	89.1	10.3	132	90	107	122	142	163	212	275	355	395	433	.9	2.1		
81	7	61.9	.046	2	-	1.47	93.1	85.6	89.4	11.7	124	83	98	111	133	155	204	260	341	373	409	1.4	1.7		
82	2	60.7	.070	1	3.35	.87	92.9	85.2	89.0	13.5	121	87	100	113	136	161	216	273	345	363	414	1.0	2.0		
83	5	63.0	.041	2	-	1.48	92.8	85.8	89.3	12.2	120	78	96	108	128	148	195	253	335	376	416	1.2	1.3		
AVERAGE		62.1	.040	2	3.35	1.33	93.0	85.6	89.3	12.0	122	82	98	110	131	154	203	259	341	376	413	1.2	1.7		
MINIMUM		58.8	.002	0	3.20	.84	91.2	84.7	88.3	10.0	113														
MAXIMUM		66.5	.074	4	3.50	2.14	94.0	87.4	89.8	13.5	134														
SAMPLES		37																							

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	C1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 4 APPALACHIAN
OHIO, W. VA., WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86															RES %	LOSS %
						RES. ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)																
											IBP	PERCENT EVAPORATED										EP					
												5	10	20	30	50	70	90	95								
84	22	60.1	0.020	1	0.10	91.3	82.7	87.0	14.8	112	75	77	95	118	149	216	273	339	370	428	1.0	4.8					
85	2	59.9	.038	-	-	92.0	82.6	87.3	13.1	120	78	94	107	129	156	212	267	341	362	420	1.1	1.2					
86	3	62.3	.018	-	-	92.3	82.6	87.4	13.4	116	72	85	102	127	150	199	254	344	379	421	1.1	1.7					
87	2	60.2	.019	0	-	91.2	83.1	87.2	13.8	118	79	91	104	129	159	218	274	348	381	431	1.2	2.2					
88	3	61.0	.043	-	-	91.2	82.6	85.9	13.0	121	75	91	107	135	164	218	268	349	387	429	1.1	1.9					
89	3	61.6	.024	-	-	91.5	83.3	87.4	14.3	110	65	75	90	111	136	198	256	339	370	412	1.0	2.7					
90	2	58.1	.025	-	-	92.5	83.8	88.2	14.1	115	76	83	96	118	148	221	281	345	373	419	1.1	3.0					
AVERAGE		60.4	.023	1	.10	91.5	82.8	87.1	14.3	114	74	81	97	121	150	213	270	341	372	425	1.0	3.7					
MINIMUM		56.9	.007	0	.03	90.2	81.8	85.4	11.8	104																	
MAXIMUM		64.3	.090	3	.17	93.8	84.4	88.6	16.1	126																	
SAMPLES		37																									

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86													
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES	LOSS		
91	2	55.7	0.009	-	-	98.7	87.3	93.0	12.4	126	75	93	108	147	163	217	248	321	360	399	1.0	1.3		
92	2	62.7	.020	-	-	95.0	87.7	91.4	13.8	116	77	87	100	126	158	211	238	292	342	403	1.3	2.2		
93	2	57.6	.017	-	-	96.7	86.0	91.4	13.0	123	77	93	108	136	166	226	268	325	352	396	1.0	2.0		
94	22	58.5	.004	1	0.16	95.7	86.8	91.3	14.9	113	76	78	94	121	156	221	266	326	355	428	1.0	5.9		
95	3	61.5	.013	-	-	95.9	86.1	91.0	14.6	114	74	81	99	127	159	210	269	345	370	406	1.0	3.0		
96	1	59.8	.028	-	-	96.4	86.9	91.7	13.0	123	79	88	110	138	168	229	270	330	354	402	1.5	2.0		
AVERAGE		58.9	.008	1	.16	95.9	86.8	91.4	14.5	115	76	81	97	125	158	220	264	325	356	420	1.0	4.7		
MINIMUM		58.3	.002	0	.09	94.9	85.6	90.6	11.3	105														
MAXIMUM		63.2	.028	2	.25	99.0	87.7	93.3	16.2	128														
SAMPLES		32																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 4 APPALACHIAN--CONTINUED

OHIO, W. VA., WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86																
							RES, ASTM D2699	MOT, ASTM C2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)															RES %	LOSS %
												PERCENT EVAPORATED																
												IBP	5	10	20	30	50	70	90	95	EP							
97	3	63.4	0.033	-	-	1.24	93.1	85.5	89.3	14.3	110	69	80	95	115	138	194	264	355	387	422	1.0	2.5					
98	4	62.8	.026	-	-	1.07	92.6	86.1	89.4	12.7	119	78	92	105	127	149	200	256	340	387	422	1.0	1.3					
99	2	62.8	.042	2	-	1.01	93.0	85.8	89.4	14.4	112	79	88	100	120	143	195	253	349	387	430	.8	2.2					
100	2	62.4	.053	-	-	1.19	92.8	85.7	89.3	12.7	117	80	95	106	123	142	187	254	339	372	408	1.0	1.0					
101	3	62.9	.048	-	-	.97	92.9	85.5	89.2	13.3	116	77	92	105	127	149	197	250	332	365	408	1.5	1.2					
102	22	64.1	.024	1	0.13	1.09	92.3	85.8	89.1	15.0	108	76	81	95	113	136	189	249	336	374	432	1.0	4.3					
103	1	-	.051	-	-	1.01	92.2	87.0	89.6	13.5	112	75	84	97	113	136	188	262	340	371	416	.6	2.4					
AVERAGE		63.6	.030	1	.13	1.09	92.5	85.8	89.2	14.3	111	76	84	98	117	139	191	252	339	376	426	1.0	3.2					
MINIMUM		59.3	.012	0	.04	.10	90.2	84.2	88.2	10.6	99																	
MAXIMUM		67.1	.077	3	.46	1.65	94.4	87.3	89.9	16.1	128																	
SAMPLES	37																											

SAMPLES 37

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86															
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED															
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	L8	F	IBP	5	10	20	30	50	70	90	95	EP	RES	LOSS				

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 5 MICHIGAN

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)																
											PERCENT EVAPORATED										EP						
											IBP	5	10	20	30	50	70	90	95								
104	1	59.2	0.027	-	-	91.2	83.5	87.4	13.9	116	71	82	98	119	148	223	280	343	374	417	1.2	2.8					
105	1	62.3	.018	-	-	90.3	83.1	86.7	14.0	113	77	89	103	122	144	196	255	343	370	400	1.4	2.6					
106	3	62.4	.024	1	-	91.0	83.2	87.1	14.1	122	80	104	114	140	172	235	295	395	-	430	.7	6.5					
107	1	60.7	.023	-	-	91.3	82.0	86.7	14.6	107	63	66	82	103	133	201	265	343	374	420	1.0	3.0					
108	2	60.5	.029	1	0.08	91.6	83.1	87.4	14.0	114	75	80	94	116	146	216	267	330	355	414	1.0	4.0					
109	1	63.9	.016	-	-	91.8	83.7	87.8	13.7	111	69	73	89	111	136	198	261	342	373	424	1.0	3.5					
AVERAGE		61.6	.023	1	.08	91.2	83.1	87.2	14.1	116	74	87	100	123	152	217	276	357	367	420	1.0	4.4					
MINIMUM		58.9	.016	0	.07	90.3	82.0	86.7	13.1	107																	
MAXIMUM		64.4	.029	2	.08	91.8	83.7	87.8	14.9	123																	
SAMPLES		9																									

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)																
											PERCENT EVAPORATED										EP						
											IBP	5	10	20	30	50	70	90	95								
110	1	60.0	0.014	-	-	95.8	88.0	91.9	-	117	75	84	107	148	190	228	263	343	375	422	1.0	3.0					
111	2	60.0	.004	0	0.11	95.1	86.6	90.9	15.4	112	75	75	96	122	156	220	267	329	359	437	1.0	6.0					
112	1	60.7	.012	-	-	97.3	87.1	92.2	13.8	118	76	89	102	121	150	247	280	346	367	402	1.1	1.9					
113	1	62.9	.022	-	-	95.7	87.7	91.7	14.0	118	77	94	108	136	166	218	244	293	328	404	1.1	1.4					
AVERAGE		62.4	.011	0	.11	95.8	87.2	91.5	14.7	115	76	83	102	130	164	227	264	328	358	420	1.0	3.7					
MINIMUM		58.7	.002	0	.04	94.9	86.2	90.6	13.8	111																	
MAXIMUM		68.9	.022	0	.18	97.3	88.0	92.2	15.8	118																	
SAMPLES		5																									

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 5 MICHIGAN--CONTINUED

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLLS	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86													RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)														
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED														
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP					
114	1	64.7	0.039	-	-	1.12	93.8	83.7	88.8	14.1	115	76	91	103	124	148	207	277	370	397	430	1.3	1.7			
115	1	63.7	.027	-	-	.82	92.3	86.1	89.2	14.4	112	75	89	102	124	148	198	257	353	394	427	1.3	1.7			
116	2	63.9	.026	2	0.09	1.17	92.6	85.6	89.1	15.1	107	79	82	95	110	131	183	251	334	371	430	1.0	5.0			
117	3	66.0	.042	2	-	1.00	93.2	85.6	89.4	13.7	116	79	99	109	127	149	199	262	364	411	423	.7	4.2			
118	1	61.8	.027	-	-	.69	93.1	85.0	89.1	14.6	112	73	84	97	118	145	204	263	354	398	432	1.0	2.0			
119	1	64.2	.036	-	-	1.10	93.0	86.8	89.9	14.3	111	75	89	100	117	140	192	259	340	375	414	1.5	2.0			
120	1	63.5	.042	-	-	1.15	91.9	86.7	89.3	13.5	112	75	89	103	123	144	182	228	327	367	406	1.7	1.8			
AVERAGE		64.4	.035	2	.09	1.03	92.9	85.6	89.3	14.2	112	77	90	102	121	143	195	257	350	386	424	1.1	3.2			
MINIMUM		61.8	.022	1	.07	.89	91.9	83.7	88.8	13.2	106															
MAXIMUM		66.2	.056	3	.10	1.24	93.8	86.8	89.9	15.5	118															
SAMPLES		10																								

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)											
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED											
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES	LOSS

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANCS--CONTINUED

DIST. 6 NORTH ILLINOIS
NORTHERN IND., NORTHERN ILL., EASTERN ICWA, AND WIS.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)											
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED											
		API	WT %	MG	VOL. %	D2699	D2700	2	L8	F	IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %
121	1	58.8	0.033	2	0.80	91.9	82.6	87.3	12.5	120	86	96	108	127	149	207	271	349	384	442	0.5	2.0
122	2	63.0	.089	1	.90	91.3	84.2	87.7	14.1	117	76	85	101	128	169	223	270	358	397	427	.8	4.0
123	2	62.2	.045	2	1.70	91.3	83.4	87.4	13.8	115	79	88	102	124	147	204	261	343	371	396	.8	2.7
124	2	61.7	.034	3	1.70	91.2	83.6	87.4	13.6	116	80	93	105	125	147	199	261	345	373	398	1.4	1.9
125	1	58.8	.031	-	-	92.2	83.5	87.9	13.7	115	69	80	96	119	147	209	256	344	374	418	1.0	3.0
126	2	60.5	.034	2	.70	91.7	83.7	87.7	13.7	118	77	86	101	122	151	227	285	348	386	421	1.5	2.6
AVERAGE		61.2	.047	2	1.16	91.5	83.6	87.6	13.7	117	78	88	102	124	152	212	268	348	381	414	1.1	2.7
MINIMUM		58.8	.028	1	.70	91.1	82.6	87.3	12.5	114												
MAXIMUM		63.2	.100	3	1.70	92.2	84.4	87.9	14.2	120												
SAMPLES	10																					

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)											
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED											
		API	WT %	MG	VOL. %	D2699	D2700	2	L8	F	IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %
127	1	59.7	0.005	1	1.30	95.8	87.5	91.7	13.6	122	81	81	110	147	170	230	269	353	410	432	1.5	5.0
128	1	59.6	.010	1	1.30	95.3	87.3	91.3	13.8	122	80	83	112	147	190	231	271	359	398	460	1.5	4.5
129	2	63.0	.016	3	.80	97.0	87.2	92.2	13.0	119	75	83	98	123	151	220	280	349	369	404	1.2	3.1
130	1	67.1	.030	-	-	95.6	86.1	90.9	13.1	117	78	84	98	123	137	212	257	338	371	418	.9	2.1
131	2	60.5	.026	2	.30	95.9	87.1	91.5	13.7	118	76	81	102	131	162	217	240	300	343	421	.9	4.2
AVERAGE		61.9	.018	2	.93	96.1	87.1	91.6	13.4	119	77	82	103	132	160	221	262	335	377	423	1.2	3.7
MINIMUM		57.0	.005	1	.30	95.3	86.1	90.9	12.8	115												
MAXIMUM		68.9	.032	3	1.30	97.2	87.7	92.5	14.3	122												
SAMPLES	7																					

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82

AVERAGE DATA FOR DIFFERENT BRANCS--CONTINUED

DIST. 6 NORTH ILLINOIS--CONTINUED

NORTHERN IND., NORTHERN ILL., EASTERN IOWA, AND WIS.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM C1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)													
												PERCENT EVAPORATED													
												IBP	5	10	20	30	50	70	90	95	EP				
132	2	64.4	0.049	3	2.70	1.38	93.1	85.2	89.2	13.2	114	78	93	105	123	142	182	226	323	373	411	1.3	1.8		
133	2	62.7	.061	2	2.20	1.16	93.2	85.3	89.3	13.2	114	82	94	106	123	142	185	230	322	365	415	.8	2.3		
134	2	63.7	.043	2	1.00	1.05	93.0	85.5	89.3	13.6	114	77	90	103	122	141	194	271	347	388	431	1.0	2.0		
135	2	62.2	.134	1	1.10	1.11	93.7	84.9	89.3	13.5	115	81	89	102	122	144	196	257	357	396	426	1.4	2.6		
136	1	63.8	.133	1	1.70	1.08	93.1	85.6	89.4	13.4	114	80	90	104	125	145	190	238	344	398	410	.5	2.5		
137	1	63.0	.052	-	-	1.18	93.2	86.3	89.8	13.3	114	80	93	105	123	140	183	232	322	377	406	2.0	2.0		
AVERAGE		63.3	.076	2	1.74	1.17	93.2	85.4	89.3	13.4	114	80	92	104	123	142	189	244	336	382	418	1.2	2.2		
MINIMUM		60.7	.035	1	1.00	1.00	92.9	84.6	88.9	12.3	111														
MAXIMUM		65.0	.188	3	2.70	1.49	93.7	86.3	89.8	14.1	118														
SAMPLES	10																								

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %		D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 7 CENTRAL MISSISSIPPI
WESTERN KY., SOUTHERN IND., SOUTHERN ILL., AND EASTERN MO.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED												
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	18P	5	10	20	30	50	70	90	95	EP	RES %	LOSS %	
138	1	68.9	0.020	0	-	92.0	82.6	87.3	12.4	118	83	87	101	124	148	197	246	310	344	395	1.0	3.5	
139	1	-	.001	-	-	92.4	83.6	88.0	13.3	119	74	95	109	136	164	208	247	332	375	411	1.0	1.0	
140	3	62.3	.028	-	-	91.6	83.5	87.6	13.3	115	70	84	98	121	146	202	254	331	365	401	1.1	1.6	
141	3	61.1	.022	-	-	93.4	82.7	88.1	13.5	117	74	90	103	124	152	210	266	339	374	409	1.1	1.6	
142	4	59.6	.025	0	-	91.2	83.0	87.1	13.4	118	73	83	99	126	157	219	273	337	369	417	1.0	2.5	
143	2	65.9	.010	0	-	91.5	83.8	87.7	13.3	116	80	84	98	125	152	201	238	305	-	381	.7	4.1	
144	4	62.1	.031	1	-	91.4	82.7	87.1	13.3	115	72	83	98	119	145	201	254	334	374	407	1.3	2.2	
AVERAGE		61.7	.023	3	-	91.8	83.1	87.5	13.3	117	74	85	100	124	151	207	258	330	369	405	1.1	2.3	
MINIMUM		58.3	.001	0	-	90.3	82.2	86.6	12.1	108													
MAXIMUM		66.2	.046	1	-	96.5	84.9	89.7	15.0	123													
SAMPLES		18																					

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED												
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES	LOSS	
145	3	60.7	0.021	-	-	95.8	87.4	91.6	13.8	116	71	82	98	123	157	220	248	304	343	399	1.1	2.2	
146	3	58.5	.016	-	-	96.9	87.2	92.1	13.5	117	70	81	95	123	159	223	278	336	360	406	1.1	2.2	
147	1	57.3	.023	-	-	95.9	87.1	91.5	10.4	132	71	92	113	145	183	219	248	312	363	399	1.4	1.6	
148	1	55.3	.001	-	-	96.8	86.7	91.8	13.9	121	68	78	110	140	181	230	268	324	376	403	1.0	3.0	
149	2	58.2	.015	-	-	96.7	85.6	91.2	12.5	117	82	100	113	131	144	177	247	329	357	390	1.1	1.4	
AVERAGE		58.7	.017	-	-	96.4	86.9	91.7	13.1	119	73	86	103	129	160	213	259	321	356	400	1.1	2.1	
MINIMUM		55.3	.001	-	-	95.2	84.7	90.2	10.4	110													
MAXIMUM		61.8	.023	-	-	97.7	87.6	92.3	14.3	132													
SAMPLES		10																					

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANCS--CONTINUED
DIST. 7 CENTRAL MISSISSIPPI--CONTINUED
WESTERN KY., SOUTHERN INO., SOUTHERN ILL., AND EASTERN MO.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										EP	RES %	LOSS %
												PERCENT EVAPORATED												
												IBP	5	10	20	30	50	70	90	95				
150	4	62.9	0.042	0	-	1.16	92.9	85.6	89.3	13.4	114	73	86	100	121	143	196	264	340	372	406	1.1	1.8	
151		63.4	.004	-	-	1.11	92.9	86.6	89.8	13.5	111	77	84	93	110	133	187	249	329	360	392	1.0	1.5	
152	3	64.3	.022	-	-	1.16	93.4	86.2	89.8	12.1	119	71	89	102	124	149	199	244	322	363	403	1.3	1.2	
153	3	62.7	.038	-	-	1.01	92.9	85.0	89.0	12.8	118	75	91	104	126	151	202	259	341	376	413	1.3	1.7	
154	4	63.7	.048	1	-	1.24	92.7	85.5	89.1	13.0	115	75	87	101	123	144	192	242	328	368	411	1.1	2.2	
155	2	66.3	.020	0	-	2.38	92.7	86.9	89.8	13.2	116	75	82	98	122	151	203	248	316	347	391	.6	3.2	
156	1	66.1	.040	0	-	1.02	93.3	85.3	89.3	13.3	115	75	81	100	123	145	195	243	327	-	404	1.0	3.5	
AVERAGE		63.9	.035	0	-	1.28	92.9	85.8	89.4	13.0	116	74	87	101	122	146	197	251	331	366	405	1.1	2.0	
MINIMUM		61.4	.004	0	-	.78	91.2	84.8	88.3	11.1	108													
MAXIMUM		68.4	.058	1	-	2.45	95.4	86.9	91.2	14.1	124													
SAMPLES	18																							

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED											
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP		

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 8 LOWER MISSISSIPPI

MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86														RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED															
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP						
157	3	61.2	0.031	-	-	91.5	83.0	87.2	12.1	124	79	94	111	134	160	211	262	338	372	408	1.2	1.8				
158	2	60.0	.024	-	-	93.0	82.3	87.6	11.6	127	77	94	112	141	171	221	272	354	385	425	1.3	1.8				
159	3	59.7	.036	-	-	92.5	83.1	87.8	11.6	128	78	93	113	142	173	224	268	348	385	423	1.1	1.9				
160	2	60.6	.039	-	-	91.5	82.8	87.2	13.3	118	71	84	99	127	159	217	267	355	391	427	1.3	2.0				
AVERAGE		60.4	.033	-	-	92.1	82.9	87.5	12.1	125	77	92	109	136	166	218	267	348	382	420	1.2	1.9				
MINIMUM		57.5	.016	-	-	91.1	81.7	86.5	9.8	117																
MAXIMUM		61.9	.060	-	-	93.9	83.9	87.9	13.5	137																
SAMPLES		10																								

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86														RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED															
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP						
161	3	55.3	0.016	-	-	98.8	87.6	92.2	11.8	123	77	91	105	130	159	214	241	306	353	384	1.0	1.4				
162	1	54.7	.029	-	-	97.2	86.2	91.7	11.7	129	84	90	115	148	183	230	263	315	345	377	1.1	3.4				
163	1	60.1	.007	-	-	96.5	87.3	92.0	12.3	121	75	82	99	123	156	219	257	321	356	408	1.2	3.3				
164	2	60.3	.017	-	-	96.2	87.2	91.7	13.2	121	77	89	105	132	163	220	255	337	370	404	1.2	2.6				
AVERAGE		57.3	.017	-	-	97.5	87.2	92.4	12.3	123	78	89	106	132	163	219	250	318	357	392	1.1	2.3				
MINIMUM		53.8	.006	-	-	95.9	86.2	91.6	11.2	118																
MAXIMUM		61.0	.029	-	-	99.0	88.0	93.4	13.6	129																
SAMPLES		7																								

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82

AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 8 LOWER MISSISSIPPI--CONTINUED

MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				
165	2	60.0	0.028	-	-	1.02	94.1	85.0	89.6	11.4	127	75	96	113	137	165	217	271	351	383	419	1.0	1.5		
166	3	60.8	.042	-	-	1.15	94.4	84.4	89.4	11.9	124	77	95	110	133	157	210	266	345	381	412	1.1	1.2		
167	3	63.2	.037	-	-	1.33	92.7	85.7	89.2	11.7	121	79	93	109	128	149	193	246	330	362	403	1.1	1.3		
168	2	61.1	.032	-	-	1.17	92.8	85.0	88.9	12.5	121	75	95	108	129	155	205	264	344	380	419	1.5	1.5		
169	1	61.4	.026	-	-	.97	92.5	85.6	89.1	13.7	117	77	89	105	130	159	213	272	352	385	418	1.3	2.7		
AVERAGE		61.4	.034	-	-	1.16	93.4	85.1	89.3	12.0	123	78	94	109	131	156	206	262	342	376	413	1.2	1.5		
MINIMUM		59.3	.015	-	-	.45	91.9	83.5	88.6	10.8	117														
MAXIMUM		64.9	.051	-	-	1.79	94.9	86.6	89.9	13.7	128														
SAMPLES		11																							

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 9 NORTH PLAINS
MINN., N. DAK., AND S. DAK.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D237 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
						RES, ASTM D2599	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES X	LOSS X
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
170	1	63.3	0.058	-	-	91.0	83.0	87.0	14.8	109	69	82	96	114	138	192	247	338	386	409	1.5	1.5	
171	1	66.3	0.011	-	-	90.6	83.0	85.8	14.4	113	75	86	103	126	151	201	235	292	318	366	1.2	2.8	
172	1	62.2	0.033	-	-	92.0	83.0	87.5	12.9	120	73	86	104	132	161	214	258	337	374	416	1.0	2.5	
AVERAGE		63.9	0.034	-	-	91.2	83.0	87.1	14.0	114	72	85	101	124	150	202	247	322	359	397	1.2	2.3	
MINIMUM		62.2	0.011	-	-	90.6	83.0	85.8	12.9	109													
MAXIMUM		66.3	0.058	-	-	92.0	83.0	87.5	14.8	120													
SAMPLES	3																						

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR., ASTM D237 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
						RES, ASTM D2599	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES X	LOSS X
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
173	1	59.8	0.013	-	-	97.0	87.2	92.1	13.9	120	78	93	109	134	168	225	265	334	358	396	1.0	1.5	
AVERAGE		59.8	0.013	-	-	97.0	87.2	92.1	13.9	120	78	93	109	134	168	225	265	334	358	396	1.0	1.5	
MINIMUM		59.8	0.013	-	-	97.0	87.2	92.1	13.9	120													
MAXIMUM		59.8	0.013	-	-	97.0	87.2	92.1	13.9	120													
SAMPLES	1																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 9 NORTH PLAINS--CONTINUED
MINN., N. DAK., AND S. DAK.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED												
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES	LOSS	
174	1	64.0	0.029	-	-	0.72	91.5	84.7	88.1	13.0	116.	77	93	107	124	144	191	249	329	369	423	1.5	1.5	
175	1	63.7	.036	-	-	.58	91.7	84.4	88.1	13.9	114	74	85	103	126	151	195	239	307	345	406	1.1	3.4	
AVERAGE		63.9	.033	-	-	.65	91.6	84.6	88.1	13.5	115	76	89	105	125	148	193	244	318	357	415	1.3	2.5	
MINIMUM		63.7	.029	-	-	.58	91.5	84.4	88.1	13.0	114													
MAXIMUM		64.0	.036	-	-	.72	91.7	84.7	88.1	13.9	116													
SAMPLES	2																							

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 10 CENTRAL FLAINS

NEBR., CENTRAL AND WESTERN IOWA, N. MO., AND NORTHERN KANS.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86													RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)														
		D287	D1266	D281	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED														
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	1BP	5	10	20	30	50	70	90	95	EP					
176	3	60.4	0.066	-	-	92.6	82.1	87.4	13.7	116	75	89	104	127	155	206	250	313	349	387	1.4	1.8			
177	1	62.6	.040	-	-	91.5	82.4	87.0	13.1	118	77	88	103	130	158	207	244	327	360	408	1.5	1.0			
178	2	64.7	.027	-	-	91.4	83.6	87.5	14.0	113	73	85	100	120	145	200	245	324	364	403	1.0	2.5			
179	1	67.8	.033	-	-	92.1	83.2	87.7	14.0	110	72	89	98	114	133	182	248	341	380	403	1.5	.5			
AVERAGE		63.8	.046	-	-	92.0	82.7	87.4	13.7	115	74	88	102	124	149	201	247	322	359	397	1.3	1.7			
MINIMUM		58.9	.019	-	-	91.4	81.4	87.0	13.1	110															
MAXIMUM		67.8	.088	-	-	92.9	83.6	87.7	14.3	118															
SAMPLES		7																							

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86													RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)														
		C287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED														
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	1BP	5	10	20	30	50	70	90	95	EP					
180	1	62.5	0.020	-	-	94.6	85.5	90.1	11.7	130	77	94	116	153	187	225	254	318	352	408	2.0	0.5			
181	2	55.7	.007	-	-	96.7	87.4	92.1	12.6	123	74	86	105	134	172	227	271	333	358	405	1.3	2.3			
182	1	59.6	.036	-	-	98.3	86.3	92.3	14.5	113	71	80	99	124	154	208	228	263	294	358	1.5	3.0			
AVERAGE		58.4	.018	-	-	96.6	86.7	91.7	12.9	122	74	87	106	136	171	222	256	312	341	394	1.5	2.0			
MINIMUM		55.5	.005	-	-	94.6	85.5	90.1	11.7	113															
MAXIMUM		62.5	.036	-	-	98.3	87.5	92.3	14.5	130															
SAMPLES		4																							

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
DIST. 10 CENTRAL PLAINS--CONTINUED
NEBR., CENTRAL AND WESTERN IOWA, NW MO., AND NORTHERN KANS.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED												
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %	
183	1	68.2	0.018	-	-	1.27	92.1	83.2	87.7	14.2	110	77	89	101	118	138	179	227	308	340	385	1.5	1.5	
184	3	61.1	.051	-	-	.64	92.1	84.6	88.3	13.9	116	73	86	102	127	156	214	266	327	373	416	1.1	2.6	
185	3	59.1	.045	-	-	.94	92.8	84.2	88.5	13.3	117	81	95	110	134	156	197	257	334	368	401	1.5	2.2	
186	3	65.2	.031	-	-	.82	93.4	84.9	89.2	14.0	111	79	95	107	124	141	177	240	320	361	405	1.2	1.0	
AVERAGE		62.4	.040	-	-	.85	92.7	84.4	88.6	13.8	114	78	92	106	127	150	194	252	328	365	405	1.3	1.9	
MINIMUM		57.2	.007	-	-	.50	91.6	83.2	87.7	11.8	106													
MAXIMUM		68.2	.130	-	-	1.27	95.6	86.5	91.1	14.8	125													
SAMPLES		10																						

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86										
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)										
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED										
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES %

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANCHES--CONTINUED

DIST. 11 SOUTH PLAINS

SOUTHERN KANS., SW MO., WESTERN ARK., OKLA., AND NORTHERN TEX.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D281	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED										RES	LOSS	
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP			%
187	2	61.8	0.013	-	-	91.5	84.1	87.8	13.9	118	73	88	133	129	164	222	270	348	380	411	1.2	1.9	
188	1	66.1	0.014	-	-	90.7	82.8	86.8	13.1	116	72	88	132	121	146	197	242	322	356	388	1.1	1.9	
189	1	66.7	0.050	1	-	91.0	83.2	87.1	14.0	119	76	96	110	138	170	218	266	375	395	420	1.0	3.0	
190	3	63.5	0.023	-	-	91.0	83.0	87.0	13.6	115	73	90	103	125	150	200	247	340	376	406	1.0	2.2	
191	4	62.6	0.020	1	-	91.8	83.6	87.7	13.8	115	76	90	101	122	149	202	253	336	368	406	1.2	1.8	
192	1	60.5	0.026	-	-	91.6	82.3	87.0	13.1	114	69	79	90	115	144	204	258	328	365	392	1.0	2.0	
193	3	65.7	0.023	-	-	92.0	82.9	87.5	13.4	116	76	89	103	126	153	201	244	308	341	393	1.1	2.4	
194	1	63.4	0.030	-	-	91.2	83.6	87.4	13.2	114	72	88	97	113	137	202	253	307	333	378	1.2	1.8	
AVERAGE		63.6	0.023	1	-	91.5	83.3	87.4	13.6	116	74	89	102	124	152	205	253	332	365	401	1.1	2.0	
MINIMUM		59.2	0.008	1	-	90.7	82.3	86.8	12.8	111													
MAXIMUM		69.1	0.050	1	-	92.2	84.4	87.9	14.8	119													
SAMPLES	16																						

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D281	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED										EP	RES %	LOSS %
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95				
195	1	67.2	0.010	-	-	96.2	85.8	91.0	13.6	120	76	91	108	129	168	223	261	326	354	400	1.2	2.8	
196	1	53.8	0.011	-	-	96.0	87.2	91.6	11.4	129	68	89	107	143	182	236	279	332	361	399	1.0	1.0	
197	1	60.1	0.012	-	-	96.0	86.8	91.4	12.6	121	75	93	108	133	162	212	248	305	341	366	1.0	1.0	
198	2	57.9	0.023	-	-	97.6	87.1	92.4	12.4	121	78	90	103	124	149	217	248	285	316	366	1.0	2.1	
199	2	59.4	0.015	-	-	96.0	86.4	91.2	13.0	118	71	85	99	126	157	211	246	306	331	373	1.1	1.7	
AVERAGE		59.4	0.016	-	-	96.5	86.7	91.6	12.6	121	74	89	104	129	161	218	254	306	336	378	1.1	1.8	
MINIMUM		53.8	0.007	-	-	94.7	85.8	90.7	10.5	114													
MAXIMUM		67.2	0.038	-	-	97.9	87.4	92.4	14.2	129													
SAMPLES		7																					

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 11 SOUTH PLAINS--CONTINUED
SOUTHERN KANS., SW MO., WESTERN ARK., OKLA., AND NORTHERN TEX.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86														RES %	LOSS %		
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)																	
												IBP	PERCENT EVAPORATED								EP								
													5	10	20	30	50	70	90	95									
200	4	64.1	0.039	3	-	0.67	92.7	84.6	88.7	13.6	114	78	91	103	121	144	192	244	335	368	411	0.8	1.9						
201	2	62.4	.028	-	-	.68	92.5	84.1	88.3	13.6	114	69	82	97	121	145	198	262	342	375	407	1.2	1.8						
202	3	61.2	.049	-	-	.86	92.8	83.8	88.3	12.8	121	76	95	111	134	161	212	265	335	376	410	1.3	1.7						
203	3	64.5	.028	-	-	.66	91.6	85.1	88.4	13.7	113	73	88	101	121	143	194	252	335	376	400	1.2	1.6						
204	1	60.5	.032	-	-	.95	93.1	85.9	89.5	12.4	121	79	93	108	128	152	211	272	346	375	416	1.3	1.7						
205	1	65.9	.070	1	-	1.20	91.8	84.3	88.1	14.0	110	77	94	104	120	135	174	245	365	392	415	1.0	2.5						
206	2	63.4	.030	-	-	.45	92.7	84.1	88.5	13.7	113	71	84	98	118	140	196	250	326	363	399	1.1	1.7						
207	1	65.4	.016	-	-	1.48	91.7	85.1	88.4	12.8	116	71	83	98	119	143	196	239	308	341	383	.9	2.1						
AVERAGE		63.3	.037	2	-	.77	92.4	84.5	88.5	13.4	115	74	89	103	123	146	197	253	336	371	406	1.1	1.8						
MINIMUM		60.3	.016	1	-	.26	91.1	83.2	87.9	12.4	110																		
MAXIMUM		66.4	.070	3	-	1.48	93.5	86.9	89.6	14.5	124																		
SAMPLES	17																												

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86														RES %	LOSS %		
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)																	
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED																	
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP								

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 12 SOUTH TEXAS

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %
						RES, ASTM D2699	MOT, ASTM D2700	R+M —			TEMPERATURE, F (CORRECTED TO 760 MM HG)														
											PERCENT EVAPORATED														
											IBP	5	10	20	30	50	70	90	95	EP					
208	1	59.9	0.070	2	0.76	91.9	82.4	87.2	12.8	121	90	96	107	132	155	218	276	349	388	422	1.0	2.0			
209	2	61.6	.013	-	-	91.3	83.1	87.2	13.1	121	75	93	106	130	159	219	261	326	366	398	.9	1.9			
210	1	61.0	.020	1	1.30	93.1	83.2	88.2	12.9	118	83	93	105	124	147	203	260	329	345	385	1.0	2.0			
211	2	61.4	.019	-	-	91.6	83.4	87.6	13.3	116	74	87	99	119	142	208	271	332	359	402	1.0	1.1			
212	1	61.3	.020	3	.84	92.0	82.4	87.2	14.5	108	85	89	101	119	137	175	232	325	379	408	1.0	3.5			
213	1	60.7	.012	-	-	91.2	82.5	86.9	12.4	121	75	89	102	125	153	214	274	350	378	420	1.0	2.0			
214	2	59.4	.018	1	.64	91.5	82.1	86.8	13.6	116	76	85	98	117	143	213	269	353	386	409	1.2	1.9			
215	1	60.8	.010	-	-	92.4	83.0	87.7	12.6	117	79	95	104	119	139	191	262	356	387	421	1.3	.7			
216	3	59.2	.022	3	2.76	92.7	82.5	87.6	12.3	122	77	94	103	133	159	209	255	316	345	385	1.1	1.7			
AVERAGE		60.4	.021	2	1.26	92.0	82.7	87.4	13.0	118	78	91	104	125	150	208	262	334	367	402	1.1	1.8			
MINIMUM		58.2	.010	1	.64	91.1	82.0	86.6	12.2	108															
MAXIMUM		64.6	.070	3	2.76	93.4	83.6	88.2	14.5	123															
SAMPLES		14																							

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)												RES %	LOSS %
											PERCENT EVAPORATED													
											IBP	5	10	20	30	50	70	90	95	EP				
217	1	57.1	0.020	3	0.56	96.9	85.6	91.3	13.5	119	87	90	106	131	161	219	270	366	391	420	1.0	4.0		
218	1	58.1	.010	2	.60	97.4	87.3	92.4	12.2	125	82	90	109	141	173	223	261	322	354	393	1.0	2.0		
219	2	55.8	.011	1	.60	96.6	86.4	91.5	13.3	117	78	88	109	123	150	208	246	311	340	373	1.3	1.8		
220	3	55.1	.005	4	3.95	97.1	85.7	91.5	12.8	126	77	92	111	145	180	237	269	317	345	379	1.2	2.5		
221	1	64.0	.017	-	-	96.4	86.9	91.7	12.4	127	72	97	117	153	187	223	264	348	376	424	1.2	1.8		
222	1	61.9	.020	2	1.08	95.7	86.0	90.9	12.9	121	82	91	106	130	161	221	263	330	368	396	1.0	2.5		
223	2	59.9	.010	-	-	91.6	87.1	92.4	11.9	122	80	95	107	125	143	213	265	309	334	381	1.0	.8		
224	2	56.2	.012	-	-	96.5	87.2	92.9	11.4	127	80	97	111	135	163	216	252	312	344	385	1.0	1.3		
AVERAGE		58.6	.012	2	1.36	97.2	86.5	91.9	12.5	123	79	93	110	135	164	221	261	322	351	388	1.1	2.0		
MINIMUM		54.8	.007	1	.56	95.7	85.4	90.9	10.6	113														
MAXIMUM		64.0	.020	4	3.95	99.9	87.3	93.5	13.5	130														
SAMPLES	13																							

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 12 SOUTH TEXAS--CONTINUED

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86														RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)															
												PERCENT EVAPORATED															
												IBP	5	10	20	30	50	70	90	95	EP						
225	2	62.3	0.021	1	1.37	0.95	92.3	86.6	89.5	13.4	115	78	88	100	118	138	196	272	347	376	407	1.0	1.0				
226	1	65.5	.030	1	1.30	1.22	92.6	85.4	89.0	11.8	117	82	94	109	125	140	174	224	309	347	408	1.0	2.0				
227	2	64.5	.023	-	-	.44	92.5	85.5	89.0	13.5	114	79	91	101	121	143	193	255	333	363	401	1.1	1.0				
228	1	60.1	.070	1	.85	1.30	93.9	85.8	89.9	11.5	123	86	103	115	127	160	212	281	351	382	420	1.0	1.0				
229	2	63.4	.020	-	-	1.91	92.6	85.3	89.0	12.6	121	79	97	111	133	159	203	244	308	337	379	1.0	1.3				
230	3	53.1	.041	1	1.78	.82	94.0	85.1	89.6	12.9	122	77	92	108	134	164	225	277	338	367	396	1.1	1.8				
231	1	64.3	.020	3	.26	.72	91.6	86.5	89.1	13.4	114	85	96	108	126	143	181	251	356	386	430	1.0	2.0				
232	2	61.7	.042	-	-	1.20	93.6	87.4	90.6	12.3	119	78	95	106	125	147	196	263	358	388	425	1.2	1.1				
233	2	69.2	.034	-	-	1.09	93.2	85.1	89.2	12.2	122	76	93	106	129	155	209	273	349	379	406	1.2	1.3				
AVERAGE		61.8	.033	1	1.11	1.06	93.0	85.8	89.5	12.7	119	79	94	107	127	151	202	263	339	369	405	1.1	1.4				
MINIMUM		57.1	.015	1	.26	.06	91.6	84.3	88.7	11.5	110																
MAXIMUM		66.5	.070	3	1.78	2.13	94.8	89.6	91.7	13.7	124																
SAMPLES		16																									

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												RES %	LOSS %		
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED															
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP						

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 13 SOUTH MOUNTAIN STATES
SW KANS., OKLA. AND TEX. PANHANDLES, W. TEX., N. MEX., COLO., UTAH, ARIZ., NEV., AND E. CALIF.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D383 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)														
											PERCENT EVAPORATED										EP				
											IBP	5	10	20	30	50	70	90	95						
234	5	63.6	0.027	-	-	90.5	82.0	86.3	13.0	118	76	90	104	126	151	202	255	332	370	412	1.2	1.8			
235	10	60.2	.005	-	1.36	91.3	82.3	86.8	12.4	123	79	92	109	136	165	216	266	332	363	403	1.1	2.2			
236	7	61.1	.031	-	.92	91.5	82.9	87.2	11.7	126	81	96	113	139	165	212	258	328	362	407	1.2	1.6			
237	1	57.6	.051	-	1.32	92.2	82.8	87.5	10.3	133	86	99	117	144	173	223	272	342	381	428	1.5	2.0			
238	1	57.0	.026	-	1.42	94.9	84.7	89.8	10.5	134	87	94	118	147	178	231	284	368	405	431	1.5	3.0			
239	5	65.5	.023	-	-	89.9	81.2	85.6	12.8	117	77	91	104	124	145	194	242	317	351	390	1.0	1.4			
240	1	59.0	.021	-	1.03	92.4	82.7	87.6	10.4	130	80	96	111	138	166	215	262	326	365	412	1.5	1.5			
241	11	59.0	.021	-	1.31	90.9	81.6	86.3	11.5	126	82	97	113	137	162	210	261	324	356	395	1.0	1.8			
242	2	56.2	.014	-	1.99	92.3	83.1	87.7	10.9	130	84	96	114	139	166	219	271	331	370	419	1.5	2.0			
243	5	60.4	.027	-	1.01	91.7	83.1	87.4	11.9	124	79	93	109	133	160	210	259	330	366	409	1.4	2.0			
244	1	59.8	.030	-	.83	91.5	82.4	87.0	10.1	134	87	101	118	145	170	218	265	347	381	426	1.5	1.5			
245	3	63.1	.020	-	-	90.9	81.8	86.4	13.2	120	76	86	105	134	166	217	264	333	373	414	1.3	2.6			
246	2	58.6	.035	-	-	90.5	81.9	86.2	12.8	122	77	90	107	134	164	218	270	336	365	415	1.3	2.0			
247	1	59.1	.029	-	1.29	91.5	82.9	87.2	10.7	130	83	93	113	140	168	218	264	339	375	421	1.5	2.5			
AVERAGE		60.8	.022	-	1.27	91.2	82.2	86.7	12.0	124	80	93	110	135	161	211	261	330	364	406	1.2	1.9			
MINIMUM		54.5	.000	-	.83	88.3	79.2	83.8	9.6	115															
MAXIMUM		70.0	.090	-	2.72	94.9	84.7	89.8	14.1	134															

SAMPLES 55

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86													RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)														
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED														
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP					
248	1	57.9	0.036	-	1.21	96.4	85.7	91.1	10.7	129	82	90	111	136	164	215	260	318	370	420	1.5	3.0			
249	4	54.0	.014	-	1.79	96.9	86.2	91.6	11.1	132	81	98	116	149	176	224	272	325	356	401	1.4	2.3			
250	4	57.0	.015	-	1.54	96.5	85.9	91.2	11.5	129	81	99	116	145	173	220	260	320	355	408	1.2	1.7			
251	3	55.6	.024	-	1.35	96.5	86.0	91.2	11.0	131	82	98	117	144	173	223	268	326	369	414	1.3	1.7			
252	1	58.0	.025	-	1.41	96.6	85.9	91.3	9.7	138	89	107	126	152	180	220	260	322	363	423	1.5	1.5			
253	4	58.3	.023	-	1.20	96.5	86.3	91.4	10.7	132	83	100	119	144	170	216	256	324	359	408	1.3	1.7			
254	2	53.3	.005	-	2.60	96.6	85.9	91.3	9.2	141	90	109	129	158	186	222	263	329	367	421	1.5	1.3			
255	1	54.0	.024	-	1.42	96.6	85.4	91.0	9.7	141	90	109	131	160	188	236	281	335	361	403	1.5	1.5			
AVERAGE		56.0	.019	-	1.62	96.6	86.0	91.3	10.7	133	83	100	119	147	175	221	264	324	361	410	1.4	1.8			
MINIMUM		44.2	.001	-	1.08	96.0	85.4	91.0	8.6	123															
MAXIMUM		58.6	.039	-	4.11	97.2	87.4	92.1	12.7	144															

SAMPLES 20

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82

AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 13 SOUTH MOUNTAIN STATES--CONTINUED

SW KANS., OKLA. AND TEX. PANHANDLES, W. TEX., N. MEX., COLO., UTAH, ARIZ., NEV., AND E. CALIF.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %		
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)																
												PERCENT EVAPORATED										EP						
												IBP	5	10	20	30	50	70	90	95								
256	5	63.3	0.027	-	-	0.82	92.1	83.9	88.0	12.7	119	74	91	105	127	153	204	252	321	353	397	1.2	1.7					
257	2	58.0	0.040	-	1.21	1.51	94.5	86.1	90.3	10.4	132	85	100	117	142	167	215	270	347	390	431	2.0	1.5					
258	2	58.0	0.039	-	1.08	.86	94.7	84.9	89.8	11.2	124	87	99	111	127	142	205	273	355	393	427	2.0	1.5					
259	7	61.5	0.160	-	.98	.81	92.5	84.4	88.5	11.3	125	82	97	110	131	155	203	257	329	361	402	1.3	1.2					
260	9	69.8	0.010	-	1.01	.84	91.7	84.1	88.0	12.4	124	80	95	112	138	164	214	264	334	367	408	1.2	1.9					
261	1	58.6	0.046	-	.90	.88	92.6	84.0	88.3	10.4	131	87	100	117	139	165	213	275	353	396	443	1.5	2.0					
262	1	60.6	0.026	-	.95	.75	92.5	84.2	88.4	10.6	129	83	98	115	136	158	206	255	334	378	421	1.5	1.5					
263	2	58.9	0.030	-	1.32	.97	92.1	84.7	88.4	10.7	130	84	97	114	136	158	211	272	340	381	425	1.5	2.0					
264	5	59.6	0.038	-	1.14	.91	92.1	84.4	88.2	11.7	125	80	94	110	135	161	216	264	336	367	406	1.2	1.8					
265	5	63.6	0.034	-	-	.73	91.4	84.3	87.9	12.3	120	83	97	111	131	153	199	249	329	368	415	1.1	1.5					
266	10	61.6	0.042	-	1.18	.92	91.4	84.2	87.8	11.6	125	82	98	114	138	161	204	249	321	357	394	1.2	1.5					
267	2	57.9	0.060	-	1.30	1.33	94.3	85.6	89.9	10.5	128	84	96	112	132	154	203	276	344	379	424	1.3	1.8					
268	1	60.1	0.010	-	-	1.16	91.8	86.4	85.1	12.3	123	79	98	113	135	158	212	264	323	352	392	1.1	1.4					
269	2	62.7	0.051	-	-	.91	92.1	84.2	88.1	13.0	119	77	95	111	132	154	202	253	325	364	423	1.3	1.8					
AVERAGE		61.0	0.054	-	1.13	.90	92.2	84.4	88.3	11.8	124	81	96	112	134	158	207	259	331	366	408	1.3	1.6					
MINIMUM		55.0	0.002	-	.87	.28	89.6	81.5	85.8	9.6	116																	
MAXIMUM		67.0	0.099	-	1.69	2.21	97.0	87.9	92.2	13.9	139																	
SAMPLES	54																											

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %	
												PERCENT EVAPORATED												
												IBP	5	10	20	30	50	70	90	95	EP			
270	1	62.3	0.066	-	-	0.95	98.1	87.8	93.0	11.1	129	81	88	115	141	167	215	261	326	365	405	1.3	1.7	
AVERAGE		62.3	0.066	-	-	.95	98.1	87.8	93.0	11.1	129	81	88	115	141	167	215	261	326	365	405	1.3	1.7	
MINIMUM		62.3	0.066	-	-	.95	98.1	87.8	93.0	11.1	129													
MAXIMUM		62.3	0.066	-	-	.95	98.1	87.8	93.0	11.1	129													
SAMPLES	1																							

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS---CONTINUED

DIST. 14 NORTH MOUNTAIN STATES
WY., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86														
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)													RES %	LOSS %
											PERCENT EVAPORATED										EP				
											IBP	5	10	20	30	50	70	90	95						
271	5	60.9	0.020	-	-	90.9	82.5	86.7	12.8	124	82	93	111	140	170	224	272	359	356	408	1.2	2.3			
272	2	-	.007	-	-	90.0	81.6	85.8	12.4	129	87	101	122	154	184	236	288	384	-	414	1.3	2.3			
273	4	-	.011	-	-	91.6	82.4	87.0	12.2	128	90	102	121	145	166	225	288	370	-	399	1.0	2.5			
274	1	63.0	.003	-	-	91.8	83.2	87.5	13.6	117	75	87	102	127	155	214	254	328	374	405	1.5	1.5			
275	1	61.3	.061	-	-	91.5	82.4	87.0	15.0	114	71	84	97	126	163	224	273	345	370	398	1.5	1.5			
276	1	63.7	.056	-	-	90.9	81.3	86.1	13.7	115	74	90	103	126	151	199	248	335	378	422	1.0	2.0			
277	1	61.3	.031	-	-	91.9	83.3	87.6	13.4	118	70	83	102	130	161	216	261	326	358	406	1.0	3.0			
AVERAGE		62.0	.021	-	-	91.1	82.4	86.8	12.9	124	82	95	112	140	167	223	275	358	367	406	1.2	2.3			
MINIMUM		60.9	.001	-	-	88.8	80.8	84.9	11.5	109															
MAXIMUM		63.7	.061	-	-	94.5	85.1	89.4	15.0	132															
SAMPLES	15																								

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED										RES %	LOSS %	
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP			
278	1	54.5	0.013	-	-	96.3	86.6	91.5	10.9	133	76	95	116	151	186	234	281	333	361	410	1.0	2.0	
279	1	54.8	.017	-	-	95.7	85.9	90.8	10.6	136	79	102	122	157	190	237	282	338	367	408	1.0	1.0	
280	1	54.0	.001	-	-	96.2	86.6	91.4	11.0	134	74	98	119	149	188	244	293	344	388	426	1.5	.5	
AVERAGE		54.4	.010	-	-	96.1	86.4	91.2	10.8	134	76	98	119	152	188	238	285	338	372	415	1.2	1.2	
MINIMUM		54.8	.001	-	-	95.7	85.9	90.8	10.6	133													
MAXIMUM		54.8	.017	-	-	96.3	86.6	91.5	11.0	136													
SAMPLES		3																					

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 14 NORTH MOUNTAIN STATES--CONTINUED
WYO., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										EP				
												PERCENT EVAPORATED														
												IBP	5	10	20	30	50	70	90	95						
281	1	63.4	0.085	-	-	0.68	93.1	84.4	88.8	13.4	117	73	93	107	127	153	201	252	338	378	402	1.5	1.5			
282	3	61.7	.007	-	-	.61	90.5	83.1	86.8	13.1	126	83	97	117	149	181	233	287	371	382	412	1.0	2.5			
283	2	-	.031	-	-	.84	90.1	83.2	86.7	12.9	120	86	97	112	132	153	203	269	368	-	400	1.0	2.2			
284	2	-	.016	-	-	.94	89.6	82.6	86.1	11.6	129	87	102	122	148	172	216	265	350	-	390	1.0	2.2			
285	1	66.1	.003	-	-	.83	92.0	84.4	88.2	12.7	117	81	96	105	128	150	190	237	309	340	382	1.0	.5			
286	1	63.2	.065	-	-	.48	92.8	84.2	88.5	12.3	122	79	97	112	137	161	206	248	333	368	410	1.0	1.0			
AVERAGE		63.6	.027	-	-	.73	90.9	83.4	87.2	12.7	123	83	98	114	140	166	213	267	353	367	401	1.1	1.9			
MINIMUM		61.7	.001	-	-	.30	89.4	82.6	86.0	10.6	116															
MAXIMUM		66.1	.085	-	-	1.08	93.1	84.4	88.8	14.6	135															
SAMPLES		10																								

SAMPLES 10

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											RES %	LOSS %	
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %		D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 15 PACIFIC NORTHWEST
WESTERN WASH. AND WESTERN OREG.

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86														RES %	LOSS %
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)															
											IBP	PERCENT EVAPORATED								EP						
												5	10	20	30	50	70	90	95							
287	3	61.6	0.053	1	0.95	92.6	82.3	87.5	13.7	113	76	83	96	118	144	201	260	351	398	425	0.9	3.5				
288	1	60.0	.010	-	2.03	91.6	82.9	87.3	12.6	121	78	84	106	132	161	211	258	300	366	421	1.5	3.5				
289	3	60.7	.010	1	1.35	91.7	82.8	87.3	12.4	121	78	91	106	130	158	207	257	314	349	395	.9	2.7				
290	2	57.8	.033	1	2.41	91.5	83.5	87.5	14.2	115	78	84	101	127	157	212	264	318	373	405	1.0	4.5				
291	5	59.9	.016	1	1.62	91.7	83.6	87.7	13.9	117	75	84	103	132	166	220	262	322	375	414	1.2	3.5				
292	2	58.3	.013	-	1.65	91.7	83.4	87.6	13.1	121	77	83	105	135	168	221	268	326	367	409	1.4	3.1				
293	1	58.9	.010	1	1.30	92.9	82.8	87.9	12.5	122	81	93	105	129	161	221	265	315	341	382	1.0	3.5				
294	1	56.1	.000	-	1.09	93.3	84.5	88.9	12.6	120	78	83	95	130	163	220	276	322	371	412	1.0	3.5				
295	1	58.8	.009	-	2.29	91.5	83.0	87.3	12.3	122	83	91	109	134	159	212	258	316	359	408	1.5	2.5				
AVERAGE		59.6	.021	1	1.62	92.0	83.1	87.6	13.2	118	77	86	102	129	159	213	262	324	367	409	1.1	3.4				
MINIMUM		55.9	.000	1	.90	91.0	81.7	86.9	11.2	108																
MAXIMUM		62.3	.087	1	2.50	93.3	84.5	88.9	15.0	130																
SAMPLES		17																								

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE, ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)														
											IBP	PERCENT EVAPORATED								EP					
												5	10	20	30	50	70	90	95						
296	1	63.0	0.010	1	0.20	98.3	88.6	93.5	13.0	120	87	99	109	131	148	213	246	303	-	385	1.0	4.0			
297	3	62.7	.008	1	.19	96.0	86.9	91.4	12.6	125	79	91	108	140	178	229	258	313	359	402	1.1	3.1			
298	3	62.1	.019	1	1.23	96.5	86.9	91.8	13.8	115	73	80	96	124	160	213	252	314	374	403	1.2	4.0			
299	2	56.4	.006	1	1.16	96.3	86.5	91.4	13.7	119	77	84	101	130	163	232	285	323	372	404	1.0	4.5			
300	3	56.9	.010	1	1.55	95.6	86.6	91.1	13.1	121	74	83	102	136	179	228	268	326	368	410	1.2	3.3			
301	2	57.5	.007	-	1.35	96.1	87.0	91.6	13.9	117	72	77	93	128	168	224	276	320	362	410	1.5	3.5			
302	1	54.2	.004	-	1.30	96.0	86.1	91.1	12.0	128	82	90	111	144	175	235	284	328	364	417	1.0	3.0			
AVERAGE		59.3	.010	1	1.01	96.2	86.9	91.6	13.2	120	76	85	102	133	169	225	266	318	366	405	1.2	3.6			
MINIMUM		54.2	.001	1	.10	95.1	86.1	90.9	11.7	110															
MAXIMUM		64.5	.026	1	1.59	98.3	88.6	93.5	15.3	128															
SAMPLES		15																							

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANES--CONTINUED

DIST. 15 PACIFIC NORTHWEST--CONTINUED
WESTERN WASH. AND WESTERN OREG.

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86													RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)														
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED														
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP					
303	1	62.8	0.020	1	1.00	0.63	93.3	83.8	88.6	12.0	122	80	93	106	128	155	211	270	339	-	388	1.0	4.0			
304	1	60.7	.010	-	.89	1.49	96.0	88.8	92.4	12.2	121	81	91	109	134	158	203	248	310	353	407	1.5	2.5			
305	2	62.9	.013	1	2.64	.68	91.7	85.7	88.7	14.1	115	79	88	104	128	155	202	247	323	353	388	1.0	3.5			
306	1	64.6	.009	-	2.36	.55	92.1	85.8	89.0	14.1	113	71	85	98	126	150	200	250	318	344	388	1.0	6.0			
307	3	61.1	.078	1	1.55	.31	93.9	82.9	88.4	13.2	114	76	86	97	116	139	193	259	363	399	426	1.0	2.8			
308	3	61.7	.029	1	1.91	.65	92.4	84.6	88.5	14.0	112	75	85	98	118	142	194	254	340	378	427	1.1	3.9			
309	2	63.0	.007	-	2.23	.77	92.1	85.5	88.8	13.6	116	78	89	105	128	151	201	253	325	374	415	1.1	2.5			
310	3	63.2	.021	1	1.02	.68	93.2	83.8	88.5	12.4	120	79	93	105	127	154	207	267	343	378	405	1.1	2.3			
311	1	61.6	.089	-	1.08	.64	93.7	82.8	88.3	12.5	119	85	96	106	125	149	201	266	356	393	429	1.0	3.0			
AVERAGE		62.3	.032	1	1.68	.65	93.0	84.6	88.8	13.2	116	78	89	102	124	149	200	257	339	374	411	1.1	3.2			
MINIMUM		59.9	.002	1	.89	.10	90.9	82.7	87.9	12.0	111															
MAXIMUM		64.6	.099	1	3.00	1.40	96.0	88.8	92.4	14.3	122															
SAMPLES		17																								

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											RES %	LOSS %	
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED													
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP				
NO SAMPLES																									

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 16 NORTH CALIFORNIA

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86														RES %	LOSS %
						RES. ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)															
											PERCENT EVAPORATED															
											IBP	5	10	20	30	50	70	90	95	EP						
312	1	56.5	0.005	-	1.74	92.6	82.8	87.7	11.1	133	87	98	121	153	187	235	274	321	358	401	1.5	2.5				
313	2	58.3	.006	1	.88	92.1	83.0	87.6	12.0	126	82	91	111	142	173	222	259	317	346	392	1.0	3.0				
314	3	59.7	.010	1	.96	91.4	83.0	87.2	12.0	121	72	86	102	128	152	204	255	329	362	403	1.2	2.1				
315	2	55.3	.005	1	.99	92.2	83.0	87.7	11.1	130	85	99	113	143	170	222	267	333	363	413	1.0	2.3				
316	3	54.5	.000	-	1.31	93.5	84.5	89.0	11.5	130	85	100	118	145	175	231	282	331	376	419	1.3	.7				
317	1	59.9	.020	-	-	92.2	82.1	87.2	12.9	120	77	89	107	132	159	210	258	332	371	395	1.0	2.5				
318	3	58.7	.023	1	1.04	91.9	83.2	87.5	11.5	127	79	96	112	139	169	218	265	337	369	408	1.5	1.8				
319	1	55.8	.003	1	.14	93.7	84.3	89.0	12.0	123	77	93	106	132	160	216	269	327	351	410	1.0	2.0				
320	1	59.2	.008	-	1.74	91.6	82.9	87.3	10.9	127	82	96	103	135	166	216	266	340	371	411	1.5	1.5				
AVERAGE		57.5	.010	1	1.09	92.3	83.3	87.8	11.7	126	80	94	111	139	167	219	266	330	364	406	1.2	1.9				
MINIMUM		51.5	.000	1	.12	91.0	82.1	86.6	10.9	116																
MAXIMUM		60.3	.054	1	1.92	93.7	84.5	89.1	12.9	134																
SAMPLES		17																								

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	SUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86														RES %	LOSS %
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED															
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP						
321	1	58.9	0.008	-	1.47	95.9	85.5	90.7	11.9	120	86	100	113	131	145	188	257	315	363	410	1.5	1.5				
322	1	55.1	.003	-	1.31	96.6	85.6	91.1	9.4	141	89	104	126	156	186	231	269	314	355	404	1.5	2.0				
323	1	62.2	.004	0	.13	94.4	88.4	91.4	11.8	122	85	104	113	132	151	192	241	322	349	403	1.0	2.0				
324	3	57.8	.010	1	.74	96.7	86.7	91.7	11.2	130	79	97	116	148	180	224	263	320	365	413	1.0	2.0				
325	2	56.8	.005	1	.82	96.3	86.1	91.2	11.2	134	85	94	122	157	193	232	259	295	326	379	1.0	4.0				
326	3	57.8	.005	0	.72	96.4	85.9	91.2	12.0	129	80	93	116	153	189	230	262	313	355	398	1.0	3.7				
327	2	56.6	.008	0	.95	96.4	86.0	91.3	11.4	135	91	109	131	163	192	233	269	323	355	395	1.5	2.0				
328	2	56.7	.009	1	.91	96.6	85.9	91.3	10.1	136	79	101	120	152	182	224	264	323	355	401	1.3	1.3				
329	3	56.0	.010	1	1.15	97.0	85.8	91.4	11.5	131	80	97	120	151	182	229	263	315	343	386	1.2	2.5				
AVERAGE		57.3	.007	1	.89	96.4	86.2	91.3	11.3	131	83	99	120	151	182	224	262	318	352	398	1.2	2.5				
MINIMUM		55.0	.003	0	.13	94.4	85.2	90.7	9.4	120																
MAXIMUM		62.2	.018	1	2.13	97.8	88.4	92.0	13.0	141																
SAMPLES		18																								

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
DIST. 16 NORTH CALIFORNIA--CONTINUED

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)											
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED											
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %
330	1	59.6	0.012	-	1.50	0.81	92.6	85.1	88.9	10.5	134	98	111	129	153	174	216	260	337	379	422	1.0	1.0
331	2	64.1	.008	1	.74	.94	92.9	84.5	88.7	12.1	119	79	94	106	126	146	190	242	321	353	396	1.0	1.5
332	1	64.5	.020	-	-	.90	92.0	84.9	88.5	13.0	116	78	91	105	126	149	189	239	315	350	398	1.0	2.0
333	2	60.9	.013	1	.78	.90	92.5	84.6	88.6	10.8	128	86	100	115	138	159	208	261	322	364	413	1.3	1.8
334	3	61.0	.015	1	.70	.71	93.0	85.2	89.1	12.1	123	80	97	111	133	157	209	263	327	367	402	1.1	1.6
335	1	60.2	.031	-	1.65	.80	96.0	84.7	90.4	11.2	121	86	97	115	130	142	174	251	331	368	403	1.5	2.0
336	2	62.2	.009	1	.76	.96	92.1	84.7	88.4	12.1	118	74	86	98	123	147	196	248	323	357	407	1.3	1.8
337	2	64.5	.009	1	.70	.92	92.5	84.6	88.6	12.6	119	87	98	112	131	151	193	242	315	344	384	1.3	2.3
338	3	58.3	.024	0	.86	.86	92.7	83.1	88.0	11.6	126	78	94	112	136	164	215	267	352	383	425	1.1	2.1
339	4	62.1	.002	1	1.05	.92	94.9	89.0	92.0	11.9	119	82	96	109	126	144	184	232	304	347	406	1.0	.7
340	1	62.0	.025	-	1.05	.96	93.4	83.9	88.7	11.2	127	86	101	116	139	160	206	259	338	369	414	1.5	1.5
AVERAGE		61.6	.013	1	.92	.89	93.2	85.3	89.3	11.8	122	82	96	111	132	153	199	251	326	361	406	1.2	1.6
MINIMUM		56.6	.001	0	.06	.52	91.8	81.7	86.8	9.9	113												
MAXIMUM		64.7	.033	1	1.65	1.09	96.0	89.2	92.2	13.1	134												
SAMPLES		22																					

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86											
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)											
		D287	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED											
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %

NO SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 17 SOUTH CALIFORNIA

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED										RES %	LOSS %	
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP			
341	3	60.0	0.025	0	0.98	91.6	82.9	87.3	11.8	126	86	108	115	143	169	218	270	339	379	420	1.2	1.8	
342	3	57.6	0.012	0	1.00	93.1	82.9	88.0	11.7	126	84	99	116	144	172	221	266	295	353	398	1.2	2.0	
343	3	58.9	0.025	0	0.52	91.5	82.5	87.0	11.1	128	84	102	124	160	190	232	276	345	383	426	1.0	2.1	
344	2	56.5	0.023	0	1.34	92.7	82.7	87.7	10.4	125	86	97	121	145	172	228	272	336	378	421	1.0	2.3	
345	3	55.8	0.016	-	1.26	94.8	84.5	89.7	11.1	130	83	93	111	141	175	231	289	349	390	430	1.5	2.3	
346	3	57.2	0.011	0	0.93	91.3	83.3	87.3	12.2	127	80	83	109	141	171	228	274	339	366	406	1.0	3.2	
347	1	57.9	0.026	-	1.04	92.3	82.8	87.6	10.9	133	86	101	122	153	187	228	269	342	381	417	2.0	2.0	
AVERAGE		57.7	0.019	0	1.03	92.5	83.1	87.8	11.4	127	84	96	116	146	175	226	275	334	376	417	1.2	2.3	
MINIMUM		54.7	0.001	0	0.50	90.9	82.4	86.9	10.2	114													
MAXIMUM		61.0	0.036	0	1.48	95.1	84.6	89.8	13.4	136													
SAMPLES		18																					

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM,	BENZENE	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86												
		ASTM	ASTM	ASTM	ASTM	RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
		D287	D1266	D381	D3606	ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED												
		API	WT %	MG	VOL. %	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %	
348	2	57.4	0.026	0	1.27	96.2	86.0	91.1	10.3	130	86	102	123	170	182	226	255	320	361	411	1.3	1.8	
349	3	57.2	0.023	0	1.92	97.1	86.3	91.7	12.2	123	85	92	114	139	167	219	263	330	373	418	1.0	2.5	
350	3	56.3	0.008	0	0.80	96.6	85.8	91.2	12.2	126	80	90	116	151	187	233	263	317	352	406	1.2	2.5	
351	3	59.3	0.009	0	1.11	96.3	86.7	91.5	10.7	127	86	98	123	148	184	225	268	328	371	412	1.2	2.2	
352	1	55.6	0.031	-	1.04	96.6	85.3	91.0	10.7	136	85	95	118	156	193	240	286	322	374	418	1.5	3.0	
353	3	57.1	0.007	0	1.11	95.4	86.7	91.1	11.6	133	84	97	124	160	194	238	277	326	353	393	1.0	2.5	
AVERAGE		57.3	0.015	0	1.22	96.3	86.3	91.3	11.4	128	84	95	120	152	184	229	268	324	363	408	1.2	2.4	
MINIMUM		52.7	0.001	0	0.70	94.7	85.3	90.8	9.6	114													
MAXIMUM		59.9	0.031	0	2.00	97.3	87.5	92.0	13.2	145													
SAMPLES		15																					

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
DIST. 17-SOUTH CALIFORNIA--CONTINUED

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 93.0

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86														RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)															
												PERCENT EVAPORATED															
												IBP	5	10	20	30	50	70	90	95	EP						
354	3	57.8	0.030	0	0.82	0.52	92.5	83.8	88.1	11.1	126	86	100	123	151	178	224	282	348	389	426	1.5	2.2				
355	3	59.6	.023	0	.61	1.25	91.2	85.4	88.3	12.4	124	81	92	111	136	166	227	285	349	371	402	1.1	2.1				
356	2	58.5	.064	0	1.19	.82	93.2	84.0	88.6	10.4	123	90	101	118	141	165	210	279	345	390	417	1.3	1.8				
357	3	55.1	.005	-	1.33	.71	96.0	88.2	92.1	11.3	131	83	92	113	145	181	236	287	342	391	430	1.3	3.2				
358	1	58.3	.059	-	1.25	.68	93.6	84.5	89.1	9.9	134	86	102	118	142	166	217	274	349	383	422	1.5	1.5				
359	3	61.2	.013	0	2.32	.57	92.7	83.5	88.3	11.9	121	84	98	113	135	155	206	259	324	360	397	1.0	1.7				
360	3	58.6	.040	0	.96	.18	92.8	83.4	88.2	11.9	123	85	98	111	137	164	221	276	350	382	418	1.3	2.4				
AVERAGE		58.5	.029	0	1.22	.67	93.1	84.8	89.0	11.5	125	85	97	115	141	170	221	278	343	381	415	1.3	2.2				
MINIMUM		55.0	.002	0	.50	.14	90.3	83.2	88.0	9.8	112																
MAXIMUM		61.5	.077	0	3.73	1.59	96.2	88.4	92.3	13.3	135																
SAMPLES		18																									

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

ITEM	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86															
		ASTM	ASTM	ASTM	ASTM		RES,	MOT,	R+M	ASTM	ASTM	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
		D297	D1266	D381	D3606		ASTM	ASTM	---	D323	D439	PERCENT EVAPORATED															
		API	WT %	MG	VOL. %	G/GAL	D2699	D2700	2	LB	F	IBP	5	10	20	30	50	70	90	95	EP	RES	LOSS				

NO SAMPLES

TABLE 4. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR BRANDS IN EACH DISTRICT

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 BELOW 90.0																											
DISTRICT NO. AND NAME	NO. OF BRANDS	SAM- PLES	GR., ASTM D287	SULF., ASTM D1246 WT %	GUM, ASTM D381 MG	BENZENE, ASTM D3506 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439° F	DISTILLATION, ASTM D86														RES X	LOSS %
							RES. ASTM D2699	MOT. ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)												EP			
												PERCENT EVAPORATED															
												18P	5	10	20	30	50	70	90	95							
1	NORTHEAST	7	7	61.6	0.029	1	2.30	92.1	82.6	87.4	13.6	118	78	89	103	126	153	216	271	341	369	406	1.1	2.6			
2	MID-ATLANTIC COAST	14	54	61.5	0.024	1	.96	92.1	82.8	87.5	13.3	117	77	90	103	124	149	207	264	339	370	409	1.1	2.2			
3	SOUTHEAST	5	28	60.5	0.026	1	2.35	92.0	82.9	87.4	12.7	121	77	91	106	130	157	213	268	343	376	413	1.2	1.8			
4	APPALACHIAN	3	37	60.4	0.023	1	.10	91.5	82.8	87.1	14.3	114	74	81	97	121	150	213	270	341	372	425	1.0	3.7			
5	MICHIGAN	6	9	61.6	0.023	1	.08	91.2	83.1	87.2	14.1	116	74	87	100	123	152	217	276	357	367	420	1.0	4.4			
6	NORTH ILLINOIS	6	10	61.2	0.047	2	1.16	91.5	83.6	87.6	13.7	117	78	88	102	124	152	212	268	348	381	414	1.1	2.7			
7	CENTRAL MISSISSIPPI	7	18	61.7	0.023	0	-	91.8	83.1	87.5	13.3	117	74	85	100	124	151	207	258	330	369	405	1.1	2.3			
8	LOWER MISSISSIPPI	4	10	60.4	0.023	-	-	92.1	82.9	87.5	12.1	125	77	92	109	136	166	218	267	348	382	420	1.2	1.9			
9	NORTH FLAINS	3	3	63.9	0.024	-	-	91.2	83.0	87.1	14.0	114	72	85	101	124	150	202	247	322	359	397	1.2	2.3			
10	CENTRAL PLAINS	4	7	63.0	0.046	-	-	92.0	82.7	87.4	13.7	115	74	88	102	124	149	201	247	322	359	397	1.3	1.7			
11	SOUTH FLAINS	8	16	63.6	0.023	1	-	91.5	83.3	87.4	13.6	116	74	89	102	124	152	205	253	332	365	401	1.1	2.0			
12	SOUTH TEXAS	9	14	60.4	0.021	2	1.26	92.0	82.7	87.4	13.0	116	78	91	104	125	150	208	262	334	367	402	1.1	1.8			
13	SOUTH MOUNTAIN STATES	14	55	60.8	0.022	-	1.27	91.2	82.2	86.7	12.0	124	80	93	110	135	161	211	261	330	364	406	1.2	1.9			
14	NORTH MOUNTAIN STATES	7	15	62.0	0.021	-	-	91.1	82.4	86.8	12.9	124	82	95	112	140	167	223	275	358	367	406	1.2	2.3			
15	PACIFIC NORTHWEST	9	17	59.6	0.021	1	1.62	92.0	83.1	87.6	13.2	118	77	86	102	129	159	213	262	324	367	409	1.1	3.4			
16	NORTH CALIFORNIA	9	17	57.5	0.030	1	1.49	92.3	83.3	87.8	11.7	126	80	94	111	135	167	219	266	330	364	466	1.2	1.9			
17	SOUTH CALIFORNIA	7	18	57.7	0.019	0	1.93	92.5	83.1	87.8	11.4	127	84	96	116	146	176	226	275	334	376	417	1.2	2.3			
AVERAGE				61.0	0.026	1	1.19	91.8	82.9	87.4	13.1	119	77	89	105	129	157	212	264	337	369	409	1.1	2.4			
MINIMUM				57.5	0.010	0	.08	91.1	82.2	86.7	11.4	114															
MAXIMUM				63.9	0.047	2	2.55	92.5	83.6	87.8	14.3	127															
SAMPLES			335																								

TABLE 4. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR BRANDS IN EACH DISTRICT--CONTINUED

UNLEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 90.0 AND ABOVE

DISTRICT NO. AND NAME		NO. OF BRANDS	SAM- PLES	GR.	SULF.	GUM.	BENZENE	OCTANE NUMBER			RVP.	20W/L	DISTILLATION, ASTM D86															RES %	LOSS %
				ASTM D287	ASTM D1266	ASTM D381	ASTM D3606	RES.	MOT.	R+M	ASTM D323	ASTM D439	TEMPERATURE, F (CORRECTED TO 760 MM HG)																
				API	WT %	MG	VOL. %	D2699	D2700	---	LB	F	PERCENT EVAPORATED																
														IBP	5	10	20	30	50	70	90	95	EP						
1	NORTHEAST	6	6	59.3	0.011	-	-	97.0	87.2	92.1	13.5	118	76	85	101	130	166	220	261	320	350	388	0.9	2.4					
2	MID-ATLANTIC COAST	10	38	59.4	.015	1	0.68	96.8	86.8	91.8	13.1	119	78	91	104	128	156	217	259	322	352	399	1.0	2.1					
3	SOUTHEAST	7	21	58.2	.010	-	-	97.0	86.8	91.9	12.4	122	77	91	107	134	164	220	260	325	359	396	1.2	1.9					
4	APPALACHIAN	6	32	58.9	.008	1	.16	95.9	86.8	91.4	14.5	115	76	81	97	125	158	220	264	325	356	420	1.0	4.7					
5	MICHIGAN	4	5	62.4	.011	0	.11	95.8	87.2	91.5	14.7	115	76	83	102	130	164	227	264	328	358	420	1.0	3.7					
6	NORTH ILLINOIS	5	7	61.9	.018	2	.93	96.1	87.1	91.6	13.4	119	77	82	103	132	160	221	262	335	377	423	1.2	3.7					
7	CENTRAL MISSISSIPPI	5	10	58.7	.017	-	-	96.4	86.9	91.7	13.1	119	73	86	103	129	160	213	259	321	356	400	1.1	2.1					
8	LOWER MISSISSIPPI	4	7	57.3	.017	-	-	97.5	87.2	92.4	12.3	123	78	89	106	132	163	219	250	318	357	392	1.1	2.3					
9	NORTH PLAINS	1	1	59.8	.013	-	-	97.0	87.2	92.1	13.9	120	78	93	109	134	168	225	265	334	358	396	1.0	1.5					
10	CENTRAL PLAINS	3	4	58.4	.018	-	-	96.6	86.7	91.7	12.9	122	74	87	106	136	171	222	256	312	341	394	1.5	2.0					
11	SOUTH PLAINS	5	7	59.4	.016	-	-	96.5	86.7	91.6	12.6	121	74	89	104	129	161	218	254	306	336	378	1.1	1.8					
12	SOUTH TEXAS	8	13	58.6	.012	2	1.36	97.2	86.5	91.9	12.5	123	79	93	110	135	164	221	261	322	351	388	1.1	2.0					
13	SOUTH MOUNTAIN STATES	8	20	56.0	.019	-	1.62	96.6	86.0	91.3	10.7	133	83	100	119	147	175	221	264	324	361	410	1.4	1.8					
14	NORTH MOUNTAIN STATES	3	3	54.4	.010	-	-	96.1	86.4	91.2	10.8	134	76	98	119	152	188	238	285	338	372	415	1.2	1.2					
15	PACIFIC NORTHWEST	7	15	59.3	.010	1	1.01	96.2	86.9	91.6	13.2	120	76	85	102	133	169	225	266	318	366	405	1.2	3.6					
16	NORTH CALIFORNIA	9	18	57.3	.007	1	.89	96.4	86.2	91.3	11.3	131	83	99	120	151	182	224	262	318	352	398	1.2	2.5					
17	SOUTH CALIFORNIA	6	15	57.3	.015	0	1.22	96.3	86.3	91.3	11.4	128	84	95	120	152	184	229	268	324	363	408	1.2	2.4					
AVERAGE				58.6	.013	1	.89	96.6	86.8	91.7	12.7	122	78	90	108	136	168	222	262	323	357	402	1.1	2.5					
MINIMUM				54.4	.007	0	.11	95.8	86.0	91.2	10.7	115																	
MAXIMUM				62.4	.019	2	1.62	97.5	87.2	92.4	14.7	134																	
SAMPLES		222																											

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TABLE 4. - MOTOR GASOLINE SURVEY, WINTER 1981-82
AVERAGE DATA FOR BRANDS IN EACH DISTRICT--CONTINUED

LEADED GASOLINE-ANTIKNOCK INDEX (R+M)/2 93.0 AND ABOVE

DISTRICT NO. AND NAME	NO. OF BRANDS	SAM- PLES	GR.,	SULF.,	GUM	BENZENE	LEAD	OCTANE NUMBER			RVP,	20V/L	DISTILLATION, ASTM D86														RES X	LOSS X		
			ASTM D287 API	ASTM D1266 WT %	ASTM D381 MG	ASTM D3606 VOL. %			RES, ASTM D2699	MOI, ASTM D2700	R+M ---	ASTM D323 LB	ASTM D439 F	TEMPERATURE, F (CORRECTED TO 760 MM HG)																
															PERCENT EVAPORATED															
			IBP	5	10	20	30	50	70	90	95	EP																		
1	NORTHEAST		NO SAMPLES																											
2	MID-ATLANTIC COAST		NO SAMPLES																											
3	SOUTHEAST		NO SAMPLES																											
4	APPALACHIAN		NO SAMPLES																											
5	MICHIGAN		NO SAMPLES																											
6	NORTH ILLINOIS		NO SAMPLES																											
7	CENTRAL MISSISSIPPI		NO SAMPLES																											
8	LOWER MISSISSIPPI		NO SAMPLES																											
9	NORTH PLAINS		NO SAMPLES																											
10	CENTRAL PLAINS		NO SAMPLES																											
11	SOUTH PLAINS		NO SAMPLES																											
12	SOUTH TEXAS		NO SAMPLES																											
13	SOUTH MOUNTAIN STATES	1	1	62.3	0.066	-	-	0.95	98.1	87.8	93.0	11.1	129	81	88	115	141	167	215	261	326	365	405	1.3	1.7					
14	NORTH MOUNTAIN STATES			NO SAMPLES																										
15	PACIFIC NORTHWEST			NO SAMPLES																										
16	NORTH CALIFORNIA			NO SAMPLES																										
17	SOUTH CALIFORNIA			NO SAMPLES																										
AVERAGE			62.3	0.066	-	-	0.95	98.1	87.8	93.0	11.1	129	81	88	115	141	167	215	261	326	365	405	1.3	1.7						
MINIMUM			62.3	0.066	-	-	0.95	98.1	87.8	93.0	11.1	129																		
MAXIMUM			62.3	0.066	-	-	0.95	98.1	87.8	93.0	11.1	129																		
SAMPLES			1																											

TABLE 5. - Location and number of samples by districts and areas for motor gasoline survey, winter 1981-82

State	Location	Area	Samples	State	Location	Area	Samples
District 1 (Northeast)				District 12 (South Texas)			
Massachusetts	Boston area	1	20	Texas	Houston area	1	29
	1 location		20		San Antonio area	1	14
					2 locations		43
District 2 (Mid-Atlantic Coast)				District 13 (South Mountain States)			
Maryland	Baltimore	1	18	Arizona	Phoenix	4	40
New Jersey and New York	New York City area	1	39	California	Bakersfield	4	29
Pennsylvania and New Jersey	Philadelphia area	1	70	Colorado	Denver	3	12
Virginia	Richmond	1	14	New Mexico	Albuquerque	3	10
	Roanoke	1	2	Texas	Amarillo	3	8
	5 locations		143		El Paso	3	20
					Salt Lake City	3	11
					7 locations		100
District 3 (Southeast)				District 14 (North Mountain States)			
Alabama	Birmingham	1	14	Montana	Billings	3	4
Florida	Jacksonville	1	3	Washington	Spokane	4	8
	Miami area	1	17	Wyoming	Casper	3	16
	Tampa	1	5		3 locations		28
Georgia	Atlanta	1	16				
South Carolina	Charleston	1	31				
	6 locations		86				
District 4 (Appalachian)				District 15 (Pacific Northwest)			
New York	Buffalo	1	6	Oregon	Portland	4	22
Ohio	Cincinnati	1	33	Washington	Bellingham	4	15
	Cleveland	1	39		Seattle	4	12
	Columbus	1	3		3 locations		49
	Lima	1	6				
	Toledo	1	6				
Pennsylvania	Pittsburgh	1	13				
	7 locations		106				
District 5 (Michigan)				District 16 (North California)			
	Central Michigan	1	6	California	San Francisco Bay area	4	57
	Detroit	1	18		1 location		57
	2 locations		24				
District 6 (North Illinois)				District 17 (South California)			
Illinois and Indiana	Chicago area	1	27	California	Los Angeles area	4	51
	1 location		27		1 location		51
District 7 (Central Mississippi)							
Indiana	Indianapolis	1	13				
	Evansville	1	8				
Kentucky	Louisville	1	14				
Missouri and Illinois	St. Louis area	2	11				
	4 locations		46				
District 8 (Lower Mississippi)							
Arkansas	Little Rock	2	5				
Louisiana	New Orleans	1	13				
Tennessee	Memphis	1	10				
	3 locations		20				
District 9 (North Plains)							
Minnesota	Minneapolis-St. Paul	2	6				
	1 location		6				
District 10 (Central Plains)							
Iowa	Des Moines	2	4				
Kansas and Missouri	Kansas City area	2	10				
Nebraska	Omaha	2	7				
	3 locations		21				
District 11 (South Plains)							
Kansas	Wichita	2	14				
Oklahoma	Bartlesville	2	2				
	Tulsa	2	11				
Texas	Dallas-Fort Worth	1	13				
	4 locations		40

FIGURE 21.-Map showing locations and numbers of samples by districts and areas for the national motor gasoline survey, winter, 1981-1982