Determination of the Potential Property Ranges of Mid-Level Ethanol Blends

FINAL REPORT

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EXECUTIVE SUMMARY

The American Petroleum Institute (API) sponsored a study to support an improved understanding of the fuel volatility and octane number impacts resulting from the blending of ethanol in motor gasoline at concentrations within the range of 10 to 30% by volume. The intent was to develop information for use in discussions regarding the need for changes in ASTM specifications to accommodate mid-level gasoline/ethanol blends. This report summarizes that effort.

71 ethanol-free gasoline samples representing the six ASTM volatility classes were collected from retail gasoline outlets and/or donated from API member companies in 2008-2009 and blended with denatured ethanol to the following blend concentrations: 0, 10, 12.5, 15, 20 and 30% by volume. Each of the resulting blends was subsequently analyzed for ethanol concentration, dry vapor pressure equivalent, distillation, temperature for a vapor-liquid ratio of 20 ($T_{V/L=20}$) and octane number.

Based on the measurements made in this study, with one exception, blending ethanol into gasoline at concentrations between 10% and 30% by volume should pose no additional challenge to meeting the volatility requirements in the current ASTM D4814-9b specifications. The one exception concerns minimum T_{50} specifications in volatility classes AA, A, B and C. ASTM D4814-9b specifies a lower minimum T_{50} for fuels containing 1-10% ethanol by volume than for hydrocarbon fuels (150^{o}F versus 170^{o}F, respectively). The 150ºF minimum T_{50} specification would need to be extended to allow any ethanol level above 10% by volume.

Vapor Pressure

- Vapor pressure typically rises with the addition of ethanol to gasoline. The increase is greatest at 10% by volume. At higher concentrations, the vapor pressure of the blend decreases.
- The magnitude of the vapor pressure increase associated with ethanol addition becomes greater as the base fuel vapor pressure decreases. For all ethanol levels, it rises steeply for blends produced using base gasoline fuels with vapor pressures below about 9.5-10.5 psi. Above this level, the vapor pressure of the base gasoline has minimal impact on the magnitude of vapor pressure increase from ethanol addition.

Distillation

- All levels of ethanol addition tend to lower the boiling temperatures in the mid-range and back-end of the distillation curve.

- At a given mid-range temperature (e.g., 200^{o}F), the percent of fuel evaporated generally increases in proportion to the amount of ethanol added to the base fuel.

Vapor-Liquid Ratio

- The addition of ethanol to gasoline at a concentration of 10% by volume significantly depresses the temperature for a vapor-liquid ratio of 20 ($T_{V/L=20}$). Additions of higher levels of ethanol generally result in either no change or a slight increase in the $T_{V/L=20}$.

Octane Number

- Addition of ethanol to gasoline increases the octane number of the blend. The rate of increase in octane number is:
    - Lower for premium unleaded base gasoline samples than for regular unleaded base gasoline samples;
    - Relatively constant for ethanol blend concentrations ranging from zero up to about 20% by volume but may decline slightly at higher levels.

BACKGROUND

The renewable fuels requirements in the federal "Energy Independence and Security Act of 2007" (EISA) grow to a level that is greater than the quantity that can be accommodated by blending ethanol into motor gasoline at concentrations of 10% by volume (E10) in every gallon. However, ethanol blending at levels higher than 10% by volume will require a waiver from the US Environmental Protection Agency (EPA) that will be based on emissions and performance considerations.

A substantial body of knowledge has developed on the relationship between fuel volatility properties (notably, distillation, vapor pressure, and vapor-liquid ratio), vehicle performance and emissions characteristics. With the addition of ethanol to gasoline, many properties of the resulting blend (e.g., hydrocarbon type and sulfur) can be expected to more or less follow simple dilution behavior. However, the volatility parameters of mixtures of gasoline and ethanol are known to exhibit non-linear trends with increasing additions of ethanol due largely to the molecular polarity characteristics of this compound. (1)[1] Lower boiling point alcohols such as methanol (65^{o}C) and ethanol (78^{o}C) form azeotropes with lower boiling point hydrocarbons and tend to behave more like the latter. The azeotropes of alcohols with hydrocarbons have a boiling point close to that of the pure hydrocarbon. Because of this phenomenon, the addition of an alcohol to gasoline results in a mixture that exhibits a vapor pressure that is higher than that of the gasoline portion of the blend. While the effects of ethanol on fuel volatility parameters at concentrations below 10% by volume have been relatively well characterized in the literature, the effects at concentrations above 10% are not well understood – particularly with respect to currently available commercial fuels. (1, 2, 3, 4, 5)

Definition of how increases in ethanol content affect volatility parameters will facilitate future discourse on the need to change existing ASTM specifications to accommodate motor gasoline that contains ethanol at concentrations greater than 10% by volume. The octane rating of gasoline is known to increase with the addition of ethanol up to the 10% by volume level; there is, nevertheless, interest in further exploring the impact of ethanol on octane over the range of potential mid-level ethanol concentrations likely to be considered in an EPA waiver petition.

Given the above context, the American Petroleum Institute (API) sponsored a study by the Southwest Research Institute (SwRI) to collect data and perform analyses to support an improved understanding of the fuel property impacts resulting from the blending of ethanol in motor gasoline at concentrations within the range of 10 to 30% by volume. This report summarizes that effort.

[1] Numbers in parentheses denote references listed at the end of this report.

TEST PLAN

As described in detail below, the study test plan entailed: (a) collecting samples of motor gasoline for use as base stocks for ethanol blending, (b) splash blending the base stocks to specified concentrations of denatured ethanol, and (c) analyzing the resultant blends for specific fuel property measurements.

Base Stocks for Ethanol Blending

In an effort to broadly represent the range of ethanol-free motor gasoline fuels available for ethanol blending (within the testing resource constraints), a multi-pronged approach was adopted to procure base stocks for the study. Fifty-five samples of regular- and premium-grade motor gasoline were collected in 5-gallon containers from retail outlets in US geographic markets where ethanol was either known or strongly suspected (based on recent fuel surveys conducted by SwRI) to not be present in the fuel distribution system. [2] The retail samples were collected over a period of approximately 12 months to ensure that all six ASTM D4814 volatility classes were represented.

Since the number of markets supplying ethanol-free gasoline at retail rapidly dwindled during the study period (September 2008 – October 2009), API members supplemented the geographic coverage of the program by donating thirteen samples of gasoline Blend stocks for Oxygenate Blending (BOB) drawn from terminals serving markets where ethanol was typically blended into the finished gasoline for sale at retail. (There also was an interest in evaluating the responses of these BOBs to the addition of ethanol since they generally have lower vapor pressure.) These sixty-eight retail and refiner-supplied base stocks did not fully encompass the full range of T_{50} values known to exist in commercial ethanol-free gasolines – particularly at the lower end of the range. To compensate for this, three ethanol-free low T_{50} fuels from a CRC Driveability test program were provided to the study and were used as base stocks for ethanol blending.

Table 1 shows the distribution of the base stocks collected and used in this study. Ranges of selected volatility characteristics of the base stocks also are shown in the table. Inspections of the vapor pressure, distillation and vapor-lock properties of the retail base stocks in Table 1 indicates that they essentially complied with the relevant geographic and seasonal ASTM D4814 gasoline volatility specifications (summarized in Tables 2 and 3).[3]

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[2] Six of the base stocks collected at retail were later determined to contain ethanol. These samples have been excluded from the data shown in Table 1 and from the results discussed later in this report.

[3] The one exception was an ASTM Class B base stock which fell slightly below the minimum $T_{V/L=20}$ specifications

Table 1: Base Stock Sample Distribution and Range of Volatility Properties

	Base Stock Sample Counts				Selected Volatility Characteristics				
	States	RUL[a/]	PUL[b/]	Total	Vapor Pressure (psi)	T_{10} (F)	T_{50} (F)	T_{90} (F)	$T_{V/L=20}$ (F)
ASTM Class AA	TX, PA, UT, TN	5	6	11	6.4 – 7.6	130 – 156	213 – 231	306 – 347	147 – 170
ASTM Class A	TX, WV, AR, SD	5	5	10	7.5 – 8.2	124 – 146	202 – 240	312 – 332	141 – 160
ASTM Class B	NE, SD, UT	4	3	7	8.9 – 11.0	119 – 134	194 – 222	29 – 333	128 – 153
ASTM Class C	TX, AL, LA, OK	3	4	7	8.3 – 12.3	110 – 132	200 – 230	320 – 351	126 – 147
ASTM Class D	TX, AL, NC	4	4	8	11.0 – 13.2	105 – 116	191 – 229	315 – 338	123 – 130
ASTM Class E	AK, SD, WV, UT, WA, IA	6	6	12	11.0 – 13.8	100 – 125	176 – 228	262 – 317	110 – 134
Refiner-supplied Summer BOBs	TX, NJ, IL, CA	3	7	10	4.8 – 7.0	139 – 163	197 – 235	310 – 335	156 – 173
Refiner-supplied Winter BOBs	TX, IL	1	2	3	10.9 – 11.7	109 – 120	193 – 229	296 – 346	120 – 134
CRC Fuels		3	0	3	13.9 – 14.7	93 – 96	143 – 171	269 – 279	104 – 109
TOTALS		**34**	**37**	**71**					

[a/] RUL = Regular unleaded gasoline
[b/] PUL = Premium unleaded gasoline

Table 2: ASTM D4814-09b Selected Vapor Pressure and Distillation Class Specifications (6)

Vapor Pressure/ Distillation Class	Vapor Pressure (psi), max	Distillation Temperature (^oF)		
		T_{10} (max)	T_{50} (min[a]/max)	T_{90} (max)
AA	7.8	158	170/250	374
A	9.0	158	170/250	374
B	10.0	149	170/245	374
C	11.5	140	170/240	365
D	13.5	131	170/235	365
E	15	122	170/230	365

[a/] Note that Footnote G in Table 1 of ASTM D4814-09b specifies the following:"Gasolines that may be blended with 1 to 10 volume percent ethanol or all other gasolines whose disposition with ethanol is not known shall meet a minimum 50% evaporated distillation temperature of 77ºC (170ºF) prior to blending with ethanol. Gasolines that contain 1 to 10 volume percent ethanol shall meet a minimum 50% evaporated distillation temperature of 66ºC (150ºF) after blending." (6)

Table 3: ASTM D4814-09b Vapor Lock Protection Class Requirements

Vapor Lock Protection Class	Minimum Temperature (^{o}F) for a Vapor-Liquid (V/L) Ratio of 20[a/]
1	129
2	122
3	116
4	116
5	105
6	95

[a/] Except for the high altitude region defined as "Area V" in ASTM D4814-09b (6)

Denatured ethanol

A 55 gallon drum of denatured fuel ethanol was procured from Abengoa Bioenergy. The fuel was inspected and determined to meet ASTM standards for fuel grade ethanol as specified in ASTM D4806. Inspection results are shown below in Table 4. The ethanol was denatured with natural gasoline and the denaturant content (as metered) was 4.7% by volume.

Table 4: Inspection Results for the Denatured Ethanol Test Fuel

Parameter	Unit	ASTM Test Method	Result
Appearance		Visual	Clear and bright
Acidity, acetic acid	wt %	D1613	0.0042
Copper	ppm	D3237	<0.01
Unwashed gum	mg/100ml	D381	1.5
Washed gum	mg/100ml	D381	1
API @60^{o}F		D4052	46.9
Specific gravity @60^{o}F	API	D4052	0.793
Density @15^{o}C	g/l	D4052	792.6
Methanol	vol %	D4815	<0.2
Methanol	wt %	D4815	<0.2
Ethanol	wt %	D5501	97.19
Ethanol	vol %	D5501	97.06
Water %	wt %	D6304 Method A	0.55725
pHe		D6423	7.15
Total Chloride	ppm	D7319	0.1
Total Sulfate	ppm	D7319	1

The denatured fuel ethanol (and all of the base stock samples) were logged into the SwRI laboratory information system then immediately stored in a cold box kept at 34-40°F.

Ethanol Blends

Each of the base stocks was splash-blended with denatured fuel ethanol (in 2-liter blended sample quantities) to the following final blend concentrations by volume: 0%, 10%, 12.5%, 15%, 20% and 30%.[4] All of the ethanol blends were prepared (and subsequently stored) in the cold box kept at 34-40°F.

Fuel Property Measurements

Measurements of the following fuel properties were conducted on each ethanol-blended sample using the ASTM test method indicated:

- Ethanol concentration (weight %), ASTM D5599
- Ethanol concentration (volume %), ASTM D5599
- Dry Vapor Pressure Equivalent (DVPE), ASTM D5191
- Distillation, ASTM D86
- $T_{V/L=20}$, ASTM D5188

Each of the ethanol-free (E0) base stock samples was analyzed for detailed hydrocarbon species using the ASTM D6729-04 test method.

Octane measurements were performed on a subset of the base stocks (and the associated ethanol-blended samples) using ASTM tests for Research Octane Number (ASTM D2699) and for Motor Octane Number (ASTM D2700). Table 5 shows the base stocks selected for octane measurements.

[4] For ease of reference, these ethanol concentrations are denoted in this report using the following terminology: E0, E10, E12.5, E15, E20 and E30.

Table 5: Distribution of Base Stock Samples Measured For Octane

	Premium Unleaded	Regular Unleaded	Total
ASTM Class AA	2	3	5
ASTM Class A	3	2	5
ASTM Class C	-	1	1
ASTM Class D	-	-	-
ASTM Class E	1	1	2
Refiner-supplied Summer BOBs	1	3	4
Refiner-supplied Winter BOBs	1	1	2
TOTALS	**8**	**11**	**19**

RESULTS AND DISCUSSION

The detailed measurements of the effects of ethanol addition on gasoline volatility (vapor pressure, distillation and vapor lock) properties and octane are contained in Appendix A of the report. This section presents the results in graphical form and provides summary observations regarding general trends.

Volatility Measurements

Effect of Ethanol on Vapor Pressure – Figure 1 shows sixteen charts which illustrate the effect of increasing the concentration of ethanol in gasoline on the vapor pressure of the blend. The charts group the measured fuels according to ASTM Class (or winter versus summer refiner-supplied BOB) and by gasoline grade (regular unleaded versus premium unleaded). The legends in the charts reference the unique identification code for the ethanol-free (E0) base stock used in each gasoline-ethanol blend.[5]

As illustrated in the figure, vapor pressure typically rises with the addition of ethanol over the range of ethanol concentrations measured in this study. For the ethanol blend levels tested, the vapor pressure is greatest when the concentration of ethanol in gasoline is 10% by volume.[6] At higher concentrations, the vapor pressure of the blend decreases. This non-linear trend is consistent with that which has been observed in the literature and has been attributed to the non-ideal mixture behavior of the highly polar ethanol molecule which – as a pure compound – has a vapor pressure of 2.3 psi. (1)

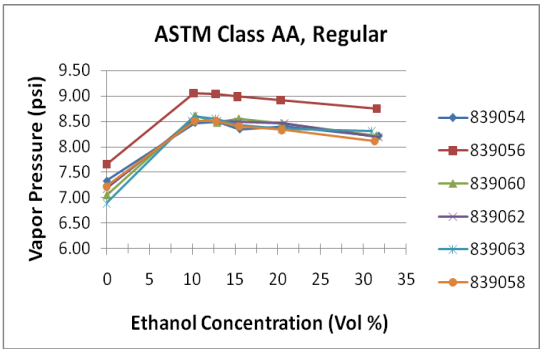
Figure 2 shows that the vapor pressure effect associated with the addition of ethanol for each level of ethanol examined in this study. Each chart illustrates that this vapor pressure effect is less in gasolines of higher vapor pressure than it is for gasolines of lower vapor pressure. As described in the literature, this phenomenon results from the fact that the partial pressure fraction generated by the ethanol mole fraction is constant for a given temperature, regardless of how much partial pressure is contributed by the gasoline. (1)

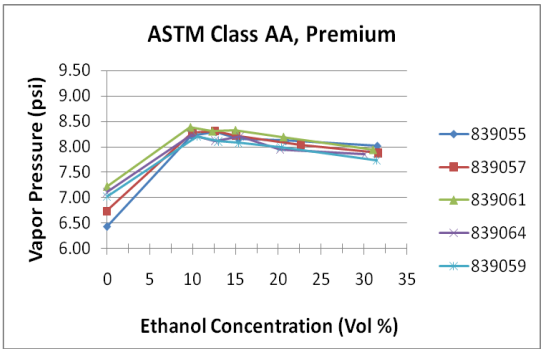
The trend lines drawn in each chart in Figure 2 represent a 2-piece linear fit of the data at each level of ethanol addition (10, 12.5, 15, 20 and 30% by volume, respectively). The chart at the bottom right of Figure 2 displays these

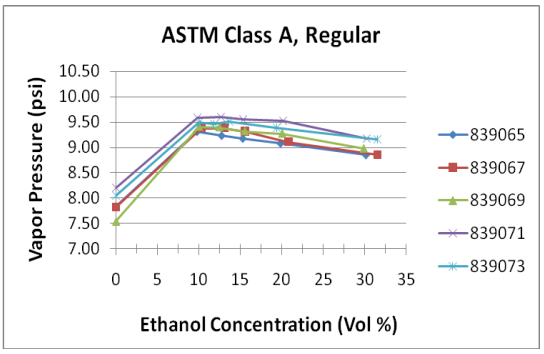
[5] This classification scheme is used for all of the figures presented in this section (except where specifically noted otherwise).

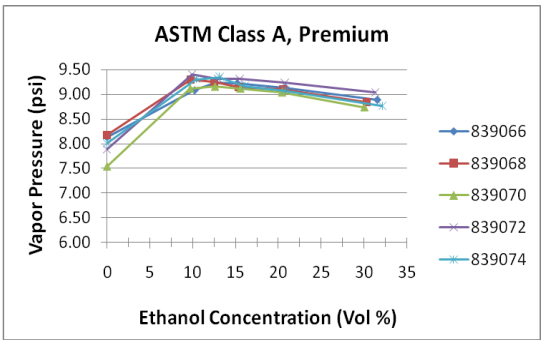
[6] The present study did not evaluate the volatility effects associated with the addition of ethanol at concentrations between 0 and 10% by volume. Other studies in the literature have shown that the maximum increase in vapor pressure with ethanol addition actually occurs in the neighborhood of 2-5% ethanol by volume, and the magnitude of the effect is a function of the vapor pressure of the underlying hydrocarbon base fuel. (1,3,4)

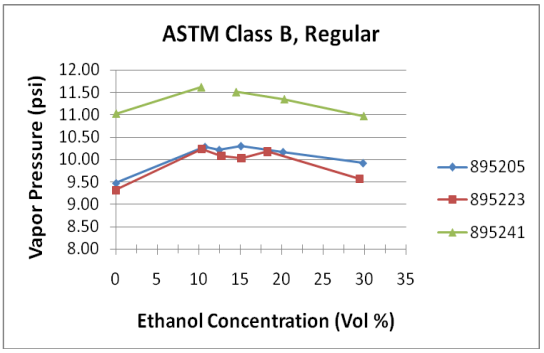
Figure 1
Effect of Ethanol Addition on Vapor Pressure

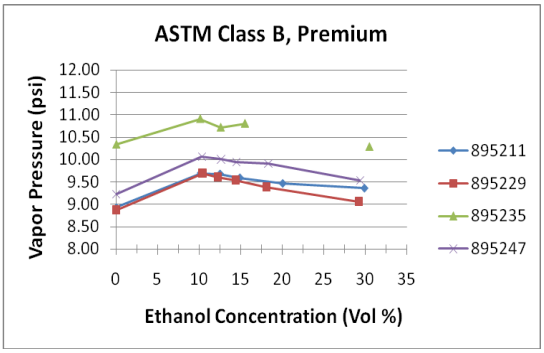


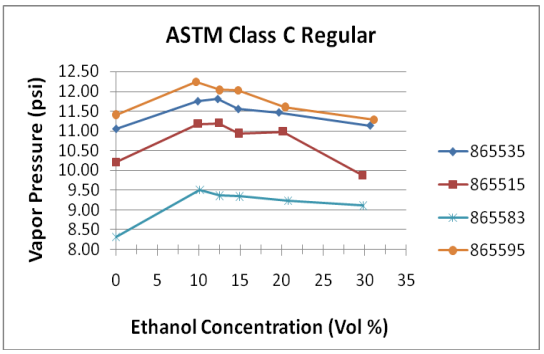












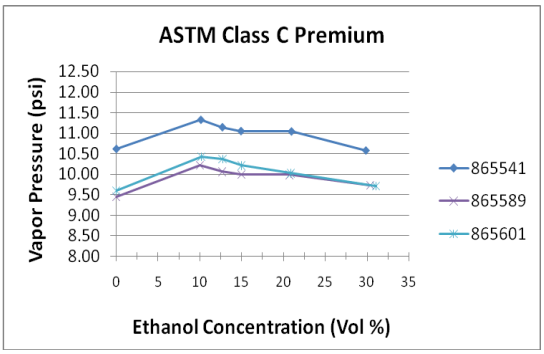
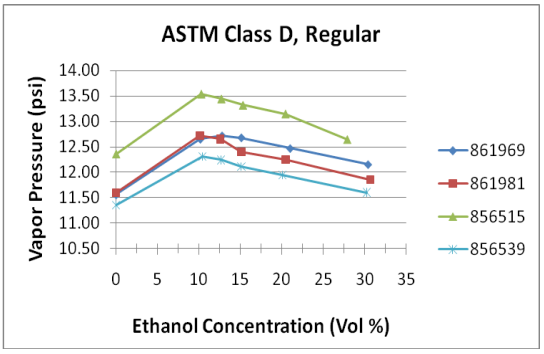
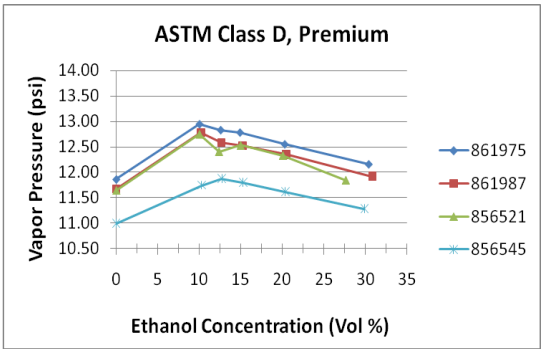
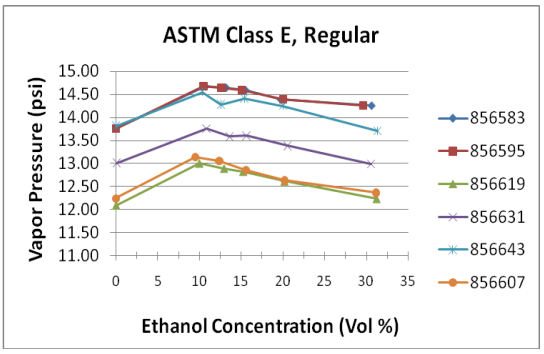
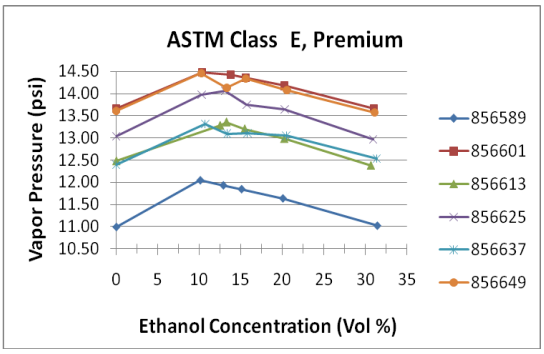


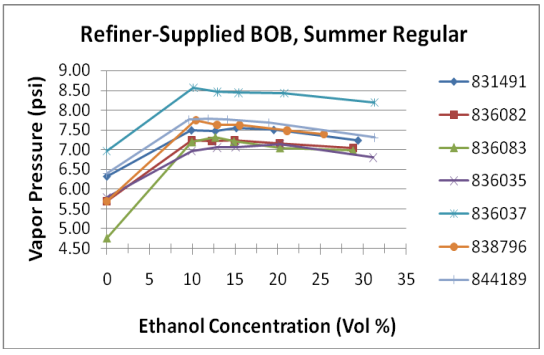
Figure 1 (cont'd)
Effect of Ethanol Addition on Vapor Pressure

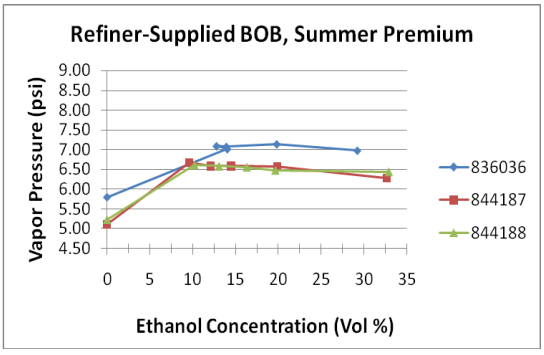


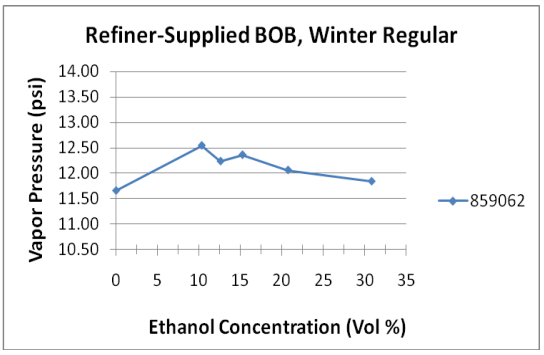












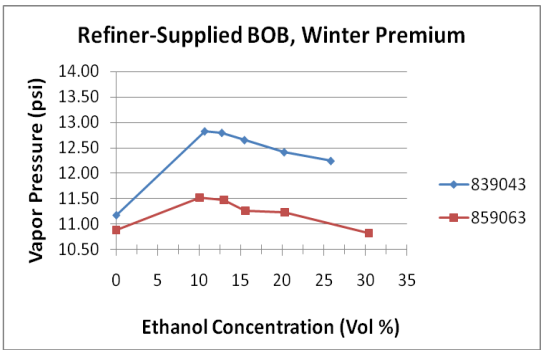
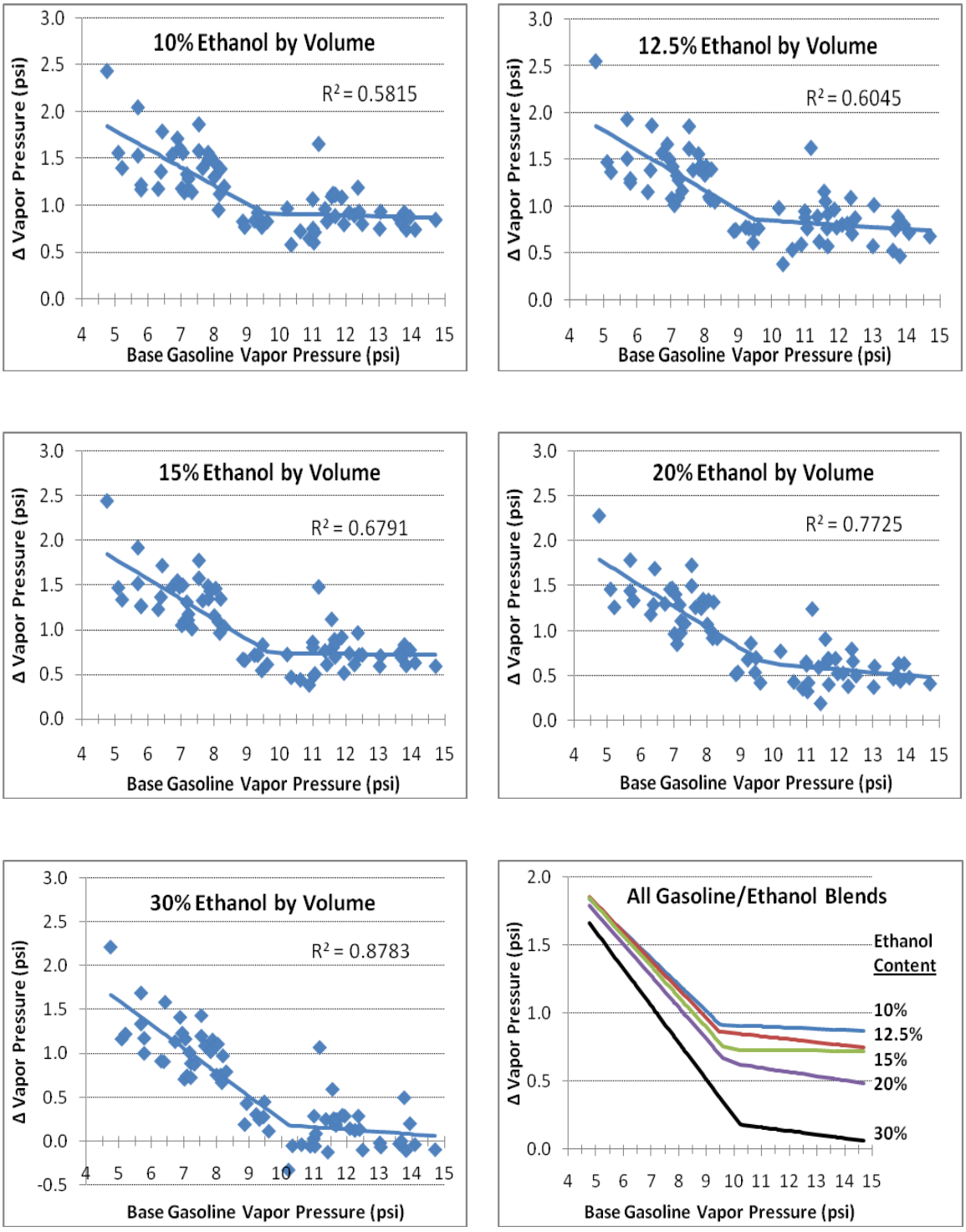


Figure 2
Change in Vapor Pressure with Ethanol Addition
As a Function of Base Gasoline Vapor Pressure



trend lines on a single plot without the individual data points for ease of viewing. The magnitude of the vapor pressure increase associated with ethanol addition becomes greater as the base fuel vapor pressure decreases. For all ethanol levels it rises steeply for blends produced with base gasoline fuels having vapor pressures below about 9.5-10.5 psi. Above this level, the vapor pressure of the base gasoline has minimal impact on the magnitude of vapor pressure increase from ethanol addition.

Effect of Ethanol on Distillation – The distillation curve is a plot of the temperature of the fuel vapor versus the volumetric fraction of the fuel sample distilled. The addition of ethanol to gasoline or hydrocarbons significantly impacts the shape of the distillation curve, particularly for T_{50}, the temperature for the first 50 percent of the fuel to evaporate. This phenomenon has been clearly demonstrated in the literature, and it is again illustrated in the fuels analyzed in this study. In mixtures of gasoline and ethanol, the ethanol molecules form azeotropes with the hydrocarbon compounds and this manifests itself as a flat portion of the distillation curve effectively at the boiling point of the azeotrope (around 160-165^{o}F). As more ethanol is added, this flattened area expands to cover a larger portion of the distillation curve. Consequently, as displayed in the figures which follow, a comparison of gasoline blends of increasing ethanol content reveals decreasing differences between the respective distillation curves and a tendency for the temperature at 50% of fuel evaporated to approach a constant value.

Figures 3 and 4 illustrate the distillation effects of adding ethanol to two retail gasoline base stocks that represent the highest and the lowest T_{50} observed in this test program (240^{o}F and 176^{o}F, respectively). The top chart in each figure displays the entire distillation range of the fuels. The same data are plotted in the bottom chart of each figure, but the scales have been expanded to focus on the mid-range portion of the distillation curves. Both Figures show that while the addition of 10-30% ethanol by volume leads to little, or no, discernible change in the initial boiling point, there is a substantial decrease in distillation temperature (i.e., increase in volatility) over the middle portion of the distillation curve. High levels of ethanol addition (i.e., the E20 and the E30 blends) increase the mid-range volatility.

For the low T_{50} base gasoline, the largest depression in the distillation curve occurs roughly between the 62% and 85% evaporated points, depending upon the amount of ethanol in the blend. For the high T_{50} fuel, the largest temperature depression occurs between the 45% and 70% evaporated points, again depending upon the amount of ethanol in the blend. Stated in other terms, at a given mid-range temperature (e.g., 200^{o}F), the percent of fuel evaporated

Figure 3
Effect of Ethanol Addition on D86 Distillation Temperature
For a Retail Base Gasoline with Low T_{50}

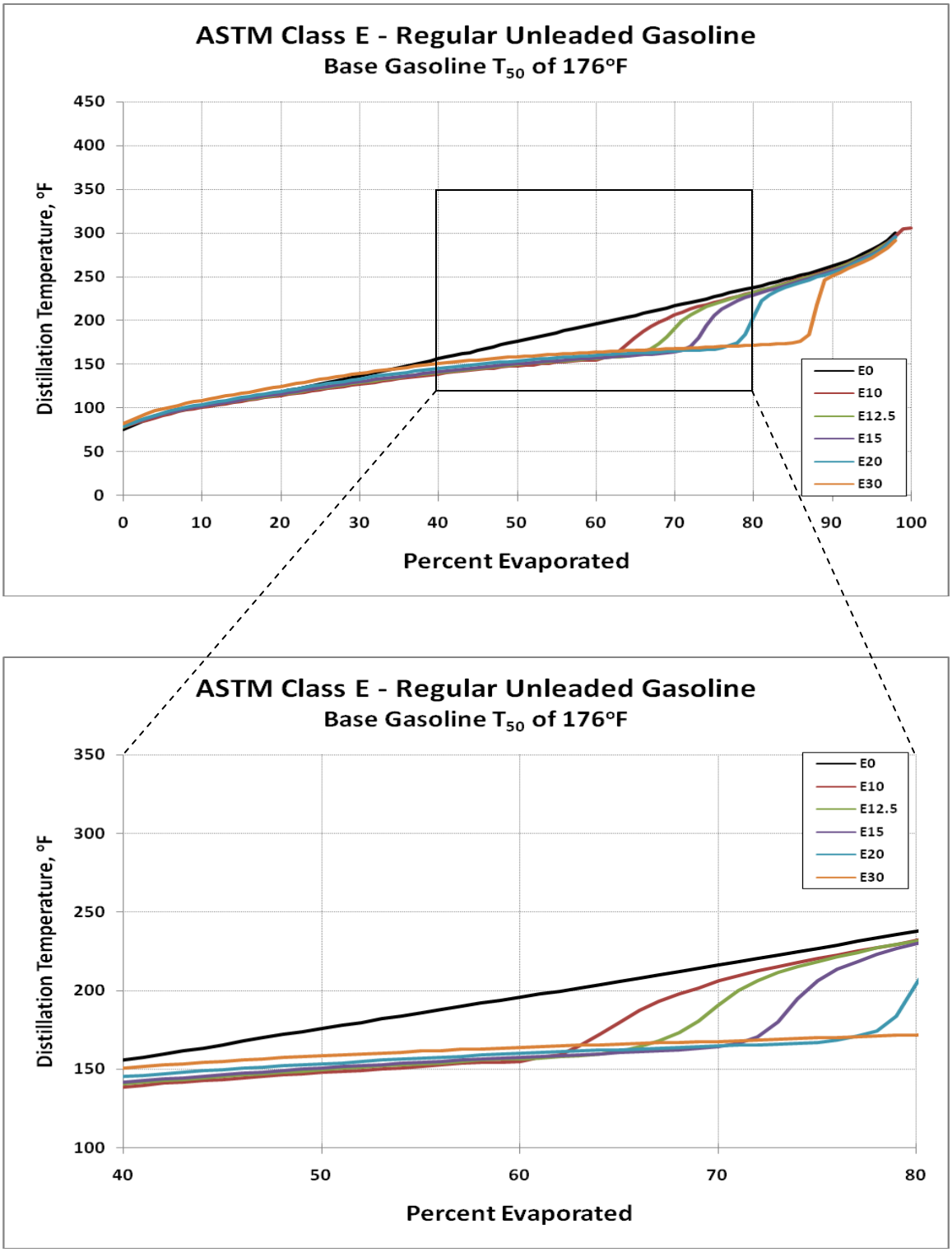


Figure 4
Effect of Ethanol Addition on D86 Distillation Temperature
For a Retail Base Gasoline with High T_{50}

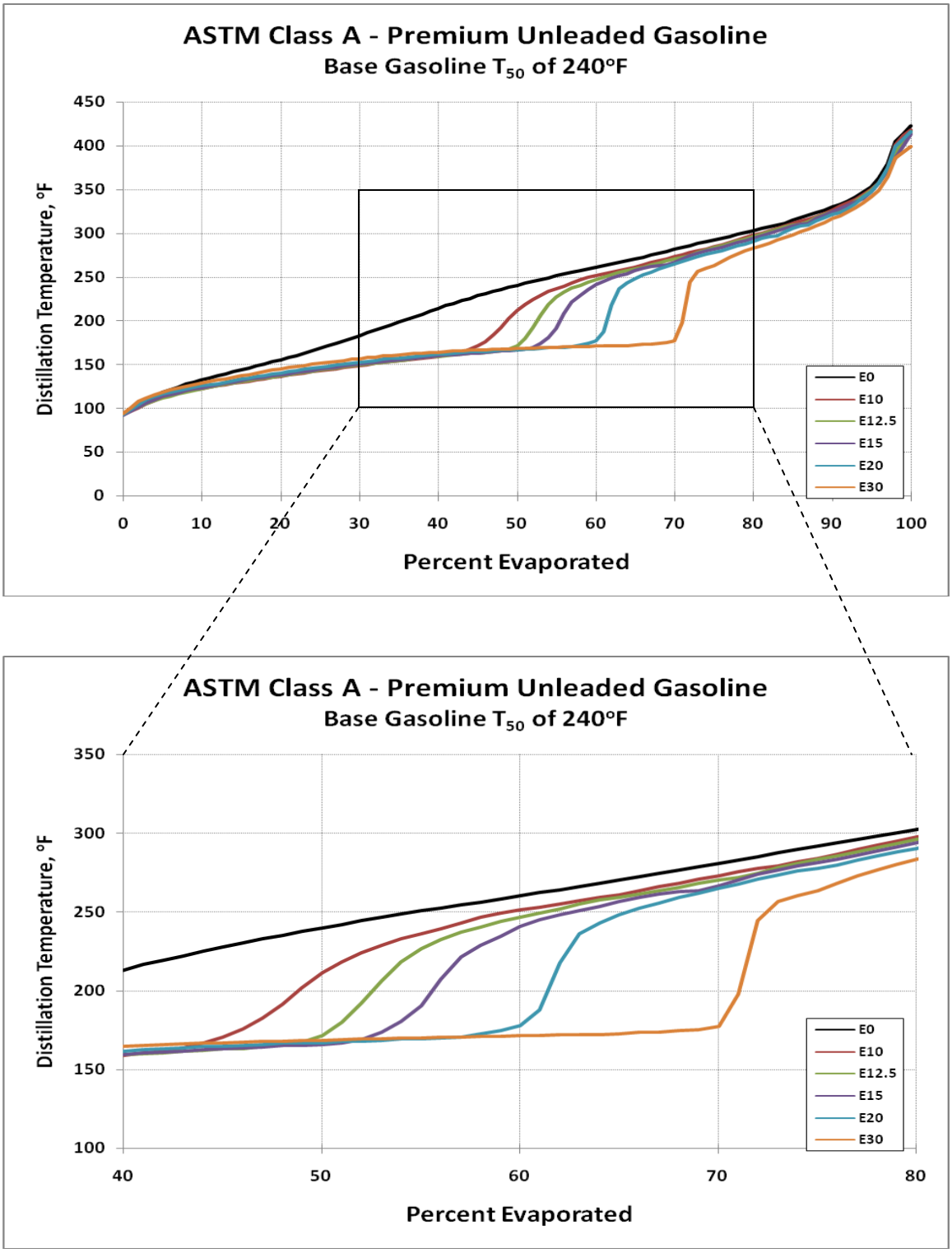


Figure 5
Effect of Ethanol Addition on D86 Distillation Temperature
For a CRC Base Gasoline with a T_{50} of 143°F

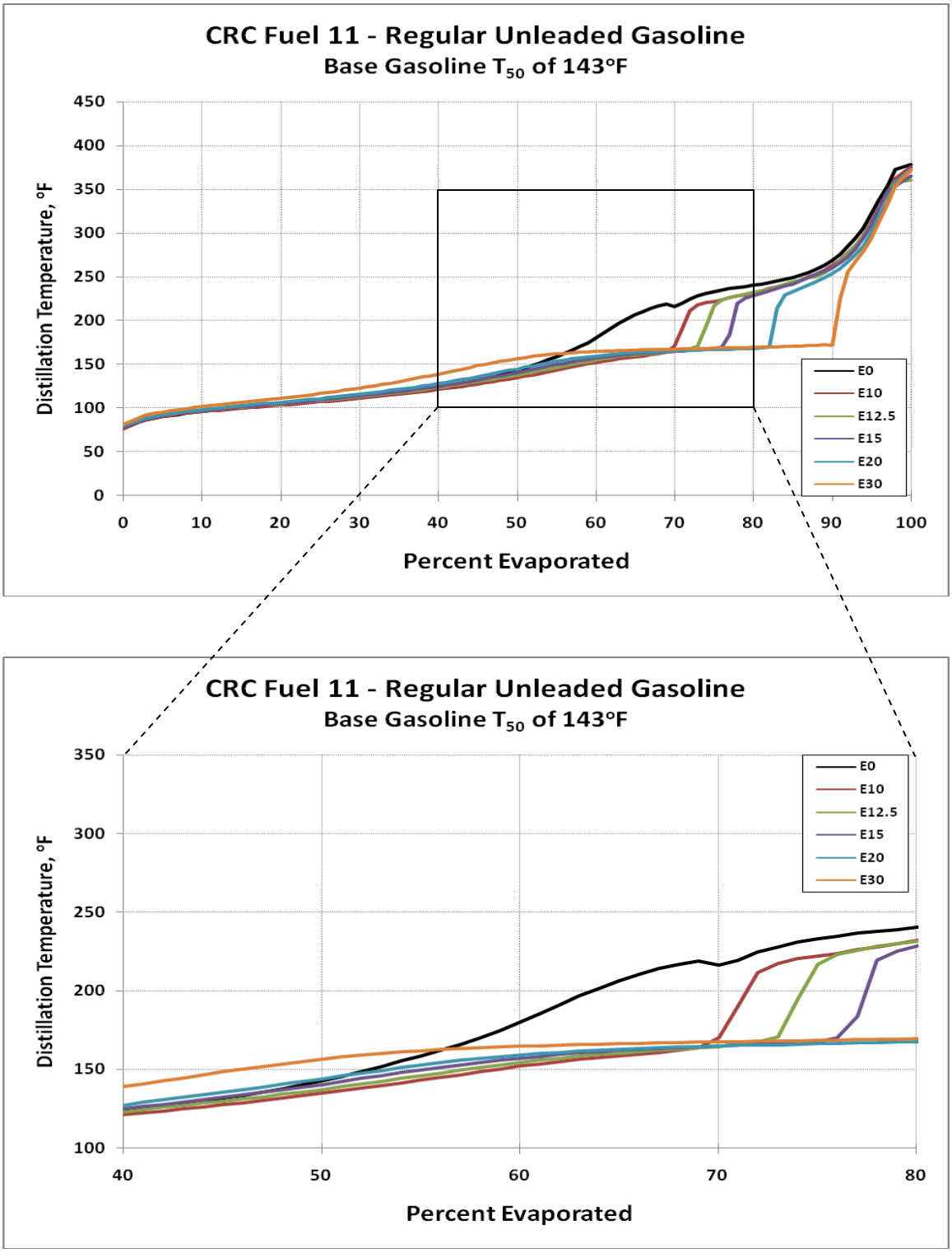
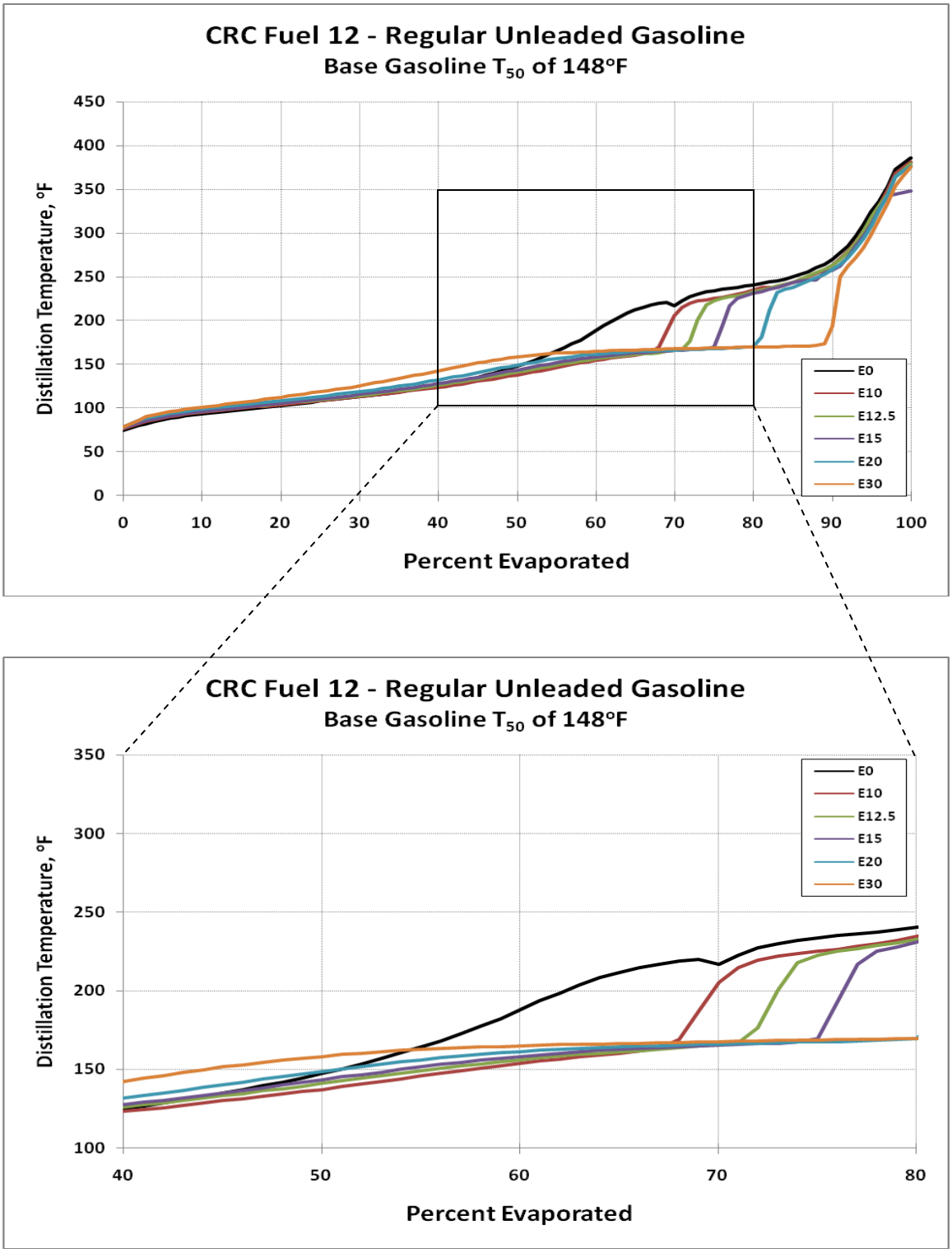


Figure 6
Effect of Ethanol Addition on D86 Distillation Temperature
For a CRC Base Gasoline with a T_{50} of 148°F



generally increases in proportion to the amount of ethanol added to the base fuel.[7]

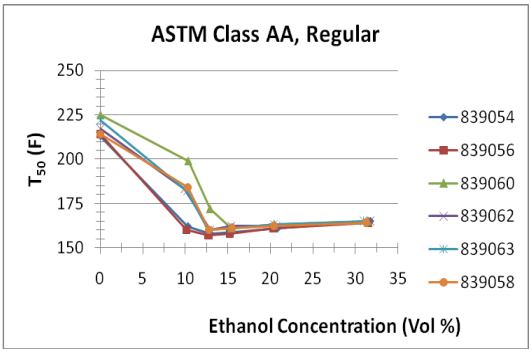
As indicated earlier, one concern with respect to the commercial gasoline samples used as the base stocks for this study was that the lower range of T_{50} (e.g., below 170°F) was not fully represented. This was the rationale that prompted the use of three low T_{50} gasoline samples donated from a vehicle driveability test program sponsored by the Coordinating Research Council (CRC). While two of these fuels had T_{50} values which fell slightly below the minimum 150°F specification in ASTM D4814, they were nevertheless thought to serve as a useful representation of the likely effects of ethanol addition to base gasoline samples with very low levels of T_{50}. These effects are shown in the charts pictured in Figures 5 and 6. Adding high levels of ethanol actually increased the T_{50} when the base gasoline T_{50} was low. The E20 blends increased the T_{50} values slightly and the E30 blend showed a large increase. Blends containing 15% ethanol by volume or less always lowered the T_{50}.

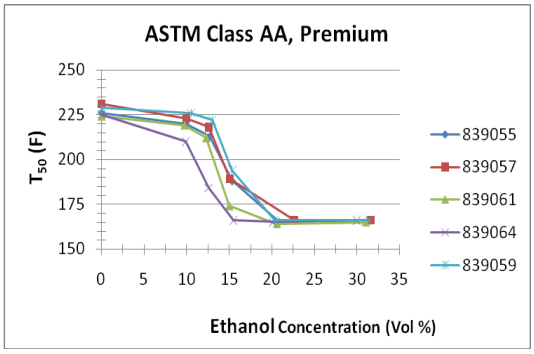
The effect of ethanol on mid-range volatility (as represented by the T_{50}) tends to reach a maximum for the fuels measured in this study when the concentration of ethanol in gasoline is in the range of 10 to 15% by volume. (See Figure 7.) At higher levels, the mid-range volatility of the ethanol gasoline blends generally remains constant or increases slightly. Of the 68 retail and BOB base stocks (excluding the 3 CRC test fuels), only one (#856595) has a T_{50} below the minimum of 150 ºF (specified in ASTM D4814 for fuels containing ethanol at 10% or less by volume). And this occurs for this particular base stock when it is blended with 10% and 12.5% ethanol by volume, respectively.

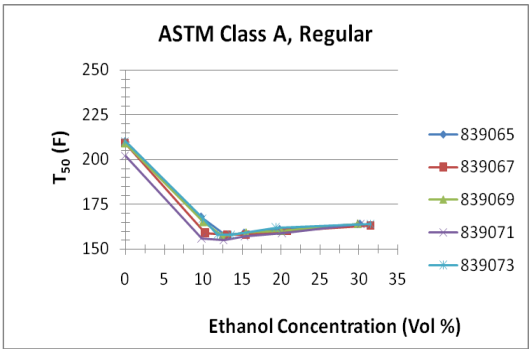
Footnote G to Table 2 of ASTM D4814-9b states that gasolines containing 1 to 10 volume percent ethanol shall meet a minimum 50% evaporated distillation temperature of 66 ºC (150 ºF) after blending. This implies that the minimum T_{50} specified in ASTM D4814 for ASTM Volatility Classes AA, A, B and C is 170°F for gasoline with over 10% by volume of ethanol. The results of this study suggest that meeting this specification is challenging particularly for E15 and higher gasoline/ethanol blends. Table 6 below shows that none of the E20 and E30 samples representative of ASTM Volatility Classes AA, A, B and C (including the summer and winter BOBs) analyzed in this study meet the minimum T_{50} specification of 170°F. Furthermore, a majority of the E12.5 and E15 samples also fall below this level. It is logical to expect ASTM to evaluate extending the 150ºF minimum 50% evaporated distillation temperature specification to higher ethanol levels if and/or when EPA grants a waiver allowing the use of higher ethanol concentrations in motor gasoline.

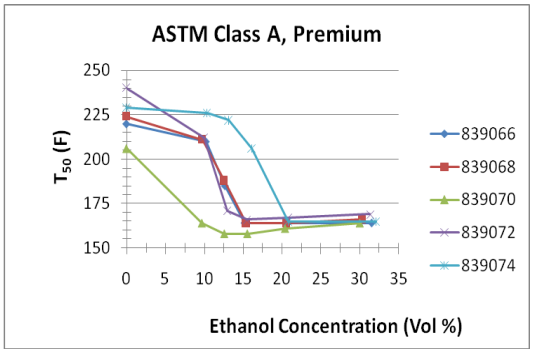
[7] This observation is not necessarily surprising as ethanol has a constant boiling temperature of 172°F whereas gasoline typically boils over a range of 80°F to 437°F. (1)

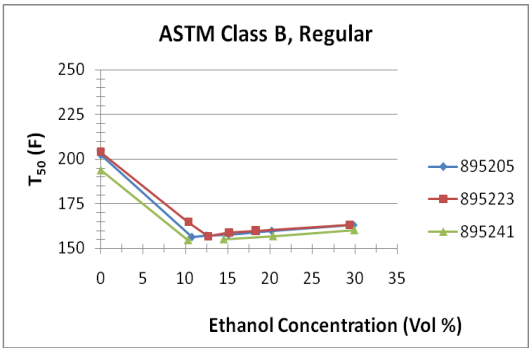
Figure 7
Effect of Ethanol Addition on T_{50}

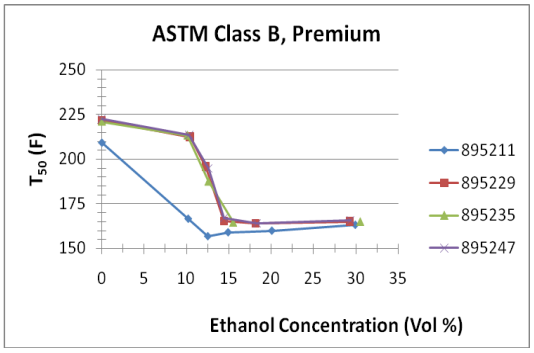


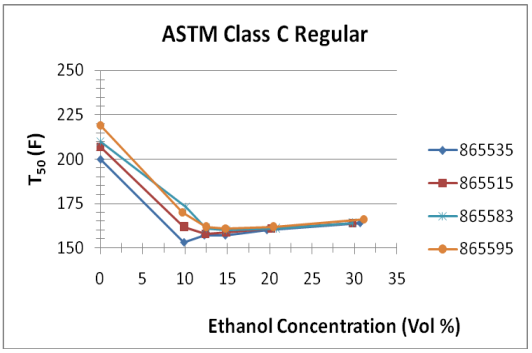












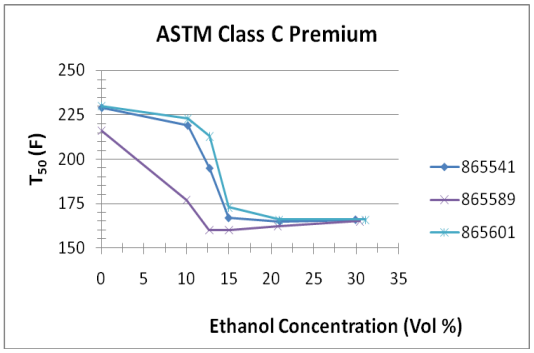
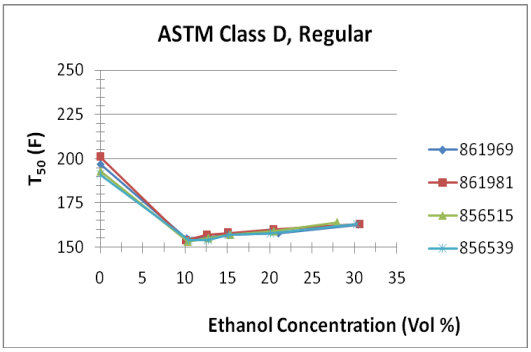
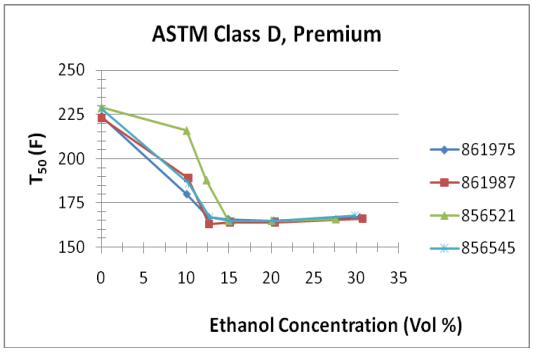
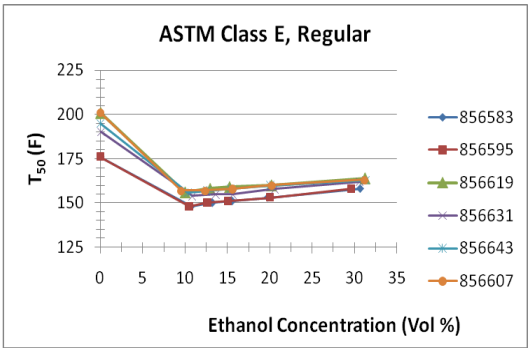
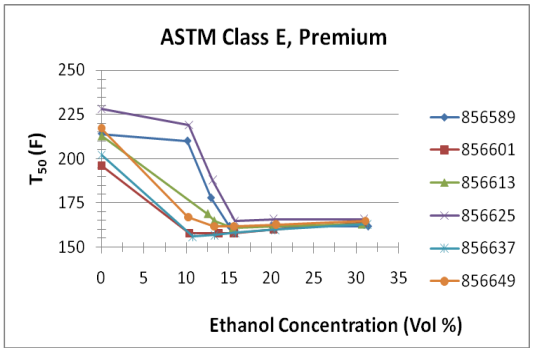


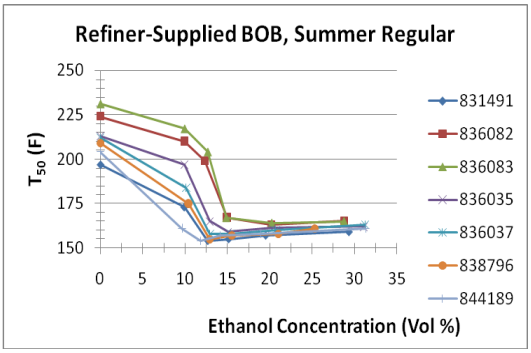
Figure 7 (cont'd)
Effect of Ethanol Addition on T_{50}

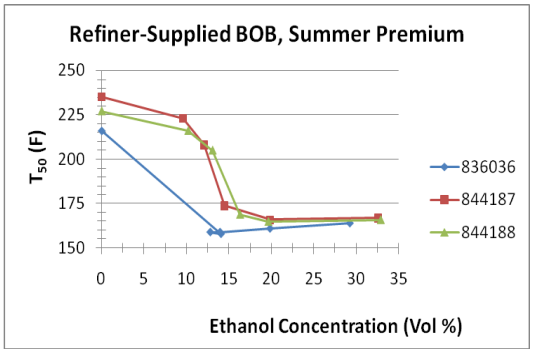


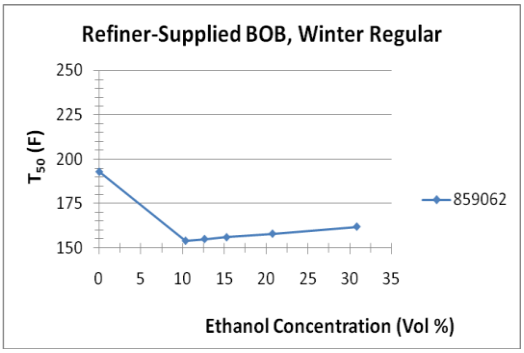












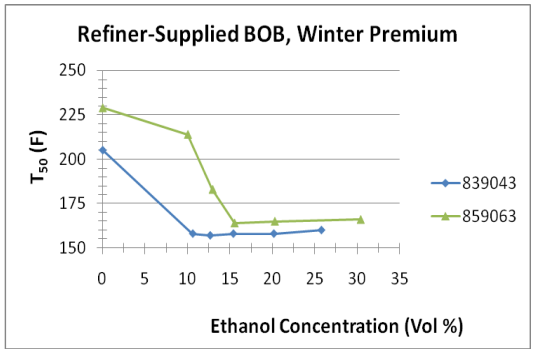


Table 6: Distribution of Samples Failing to Meet the ASTM D4814 Minimum T_{50} Specification of 170°F for ASTM Volatility Classes AA, A, B and C

Nominal Ethanol (Volume %)	Range of Measured T_{50} (°F)	# of Samples with T_{50}<170°F	Total Samples
0	193 – 240	0	48
10	153 – 226	18	48
12.5	154 – 222	28	47
15	155 – 206	41	48
20	157 – 167	47	47
30	159 – 168	48	48

Effect of Ethanol on Vapor-Liquid Ratio - The charts presented in Figure 8 demonstrate that mixing ethanol and gasoline at a concentration of 10% by volume significantly depresses the temperature for a vapor-liquid ratio of 20 ($T_{V/L=20}$). Additions of higher levels of ethanol generally result in either no change or a slight increase in the $T_{V/L=20}$ over the range of ethanol concentrations and base gasoline samples analyzed in this study. Blending ethanol in gasoline at concentrations between 10 and 30% by volume should not pose a problem for meeting ASTM D4814-9b minimum vapor lock protection specifications.

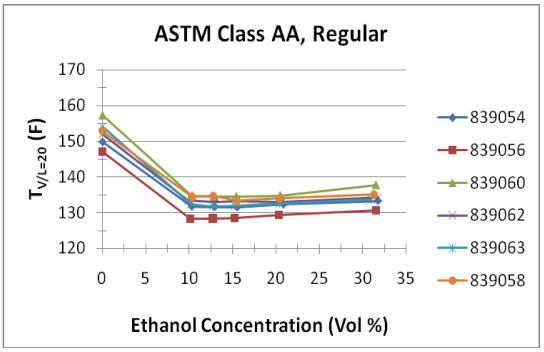
Octane Number Measurements

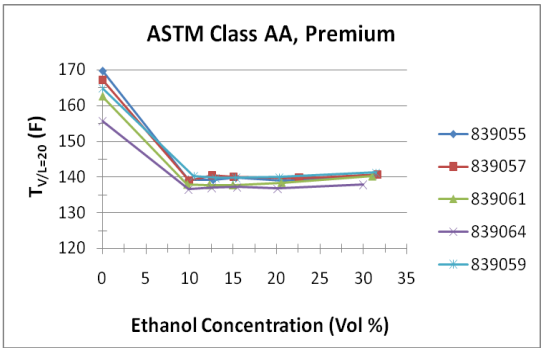
Effect of ethanol on Octane Number – Figure 9 shows the effect of ethanol addition on the octane rating. The data are shown separately for premium versus regular unleaded gasoline samples and for Research Octane Number, Motor Octane Number, and the antiknock index (R+M/2). Figure 10 presents the same data as in Figure 9, except that the results are now shown as the increase in octane number with octane addition relative to the base gasoline (E0). A visual inspection of the charts in Figures 9 and 10 suggests that the rate of increase in octane number with ethanol addition is: (a) lower for premium unleaded base gasoline samples than for regular unleaded base gasoline samples; and (b) relatively constant for ethanol blend concentrations ranging from zero up to about 20% by volume but may decline slightly at higher levels. In short, the octane number boost provided by ethanol decreases with increasing base fuel octane number level.

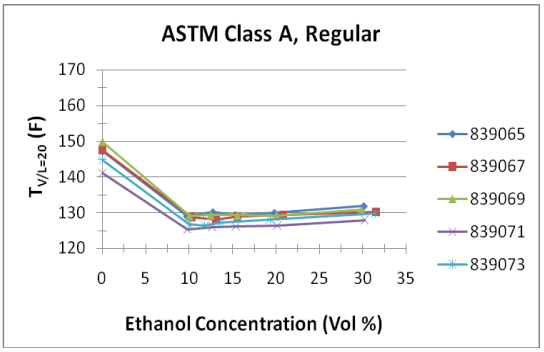
Figure 11 illustrates trends in sensitivity (Research Octane Number minus Motor Octane Number) with the addition of ethanol. The variability in the change in sensitivity with increasing ethanol content is reflective of underlying

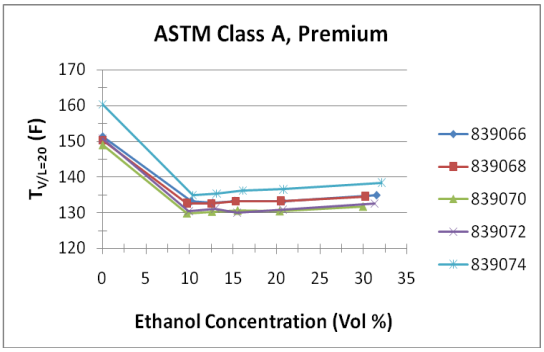
differences among the hydrocarbon compositions of the base gasoline samples. At high levels of ethanol addition, the sensitivities tend to converge. This simply reflects the effect of a greater concentration of a relatively high octane number blending value single component molecule in the fuel mixture. Stated in other words, as sensitivity increases, the boost provided by the addition of ethanol decreases.

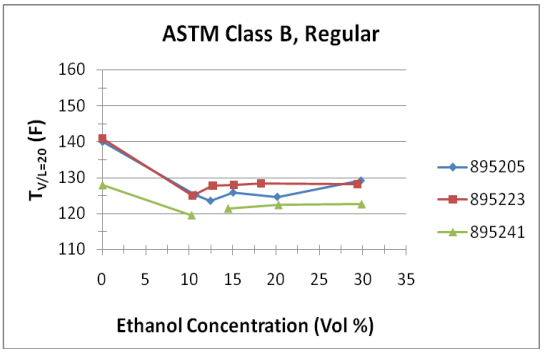
Figure 8
Effect of Ethanol Addition on Temperature for V/L=20

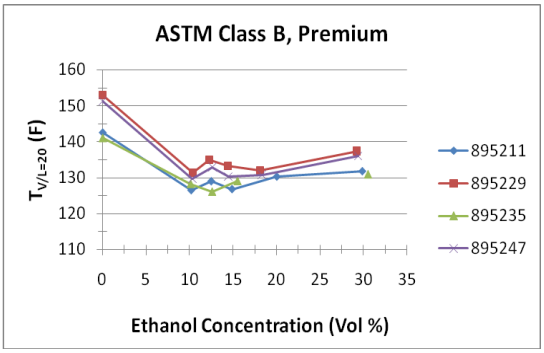


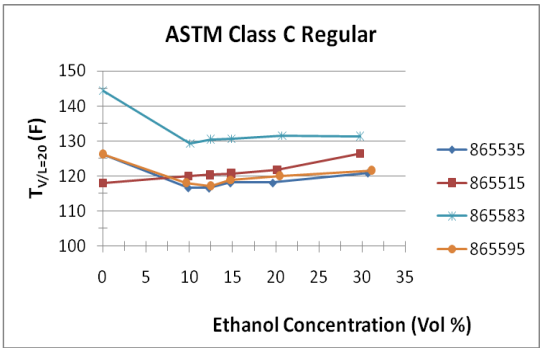












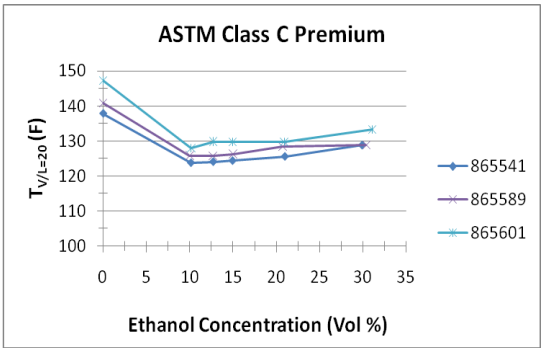
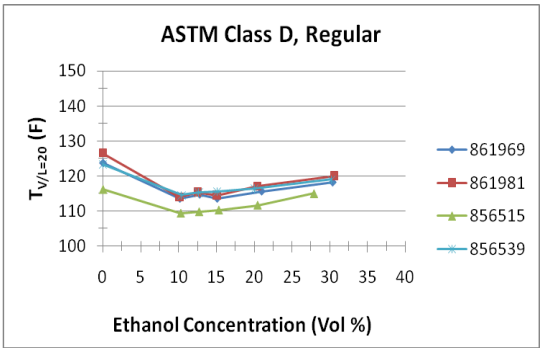
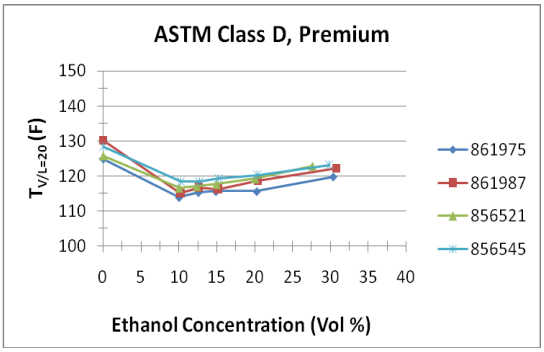
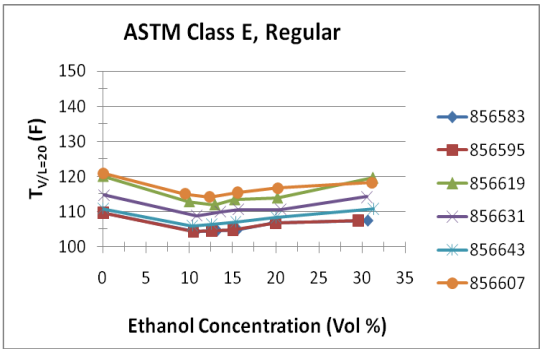
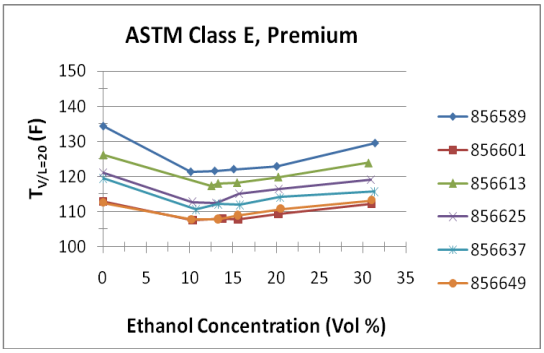


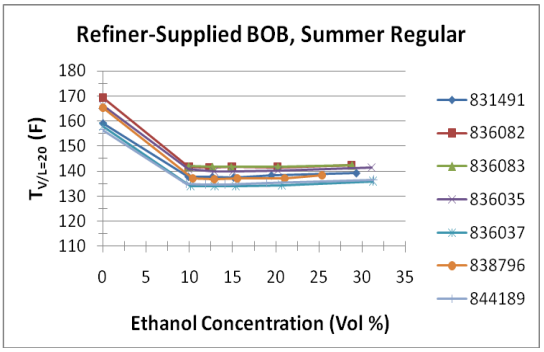
Figure 8 (cont'd)
Effect of Ethanol Addition on Temperature for V/L=20

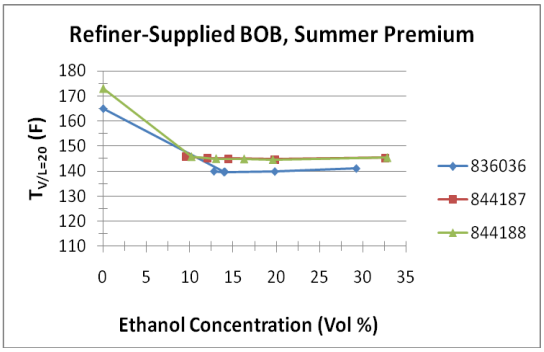


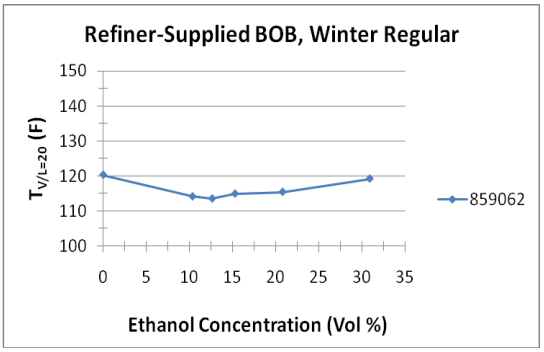












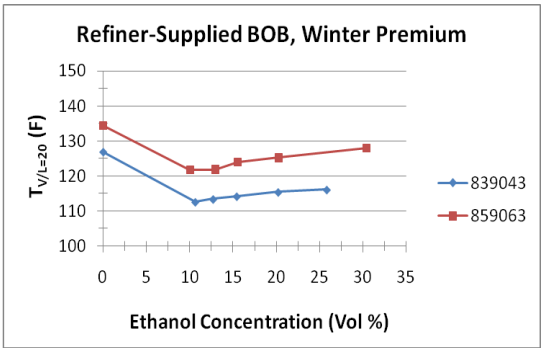


Figure 9
Effect of Ethanol Addition on Octane Number

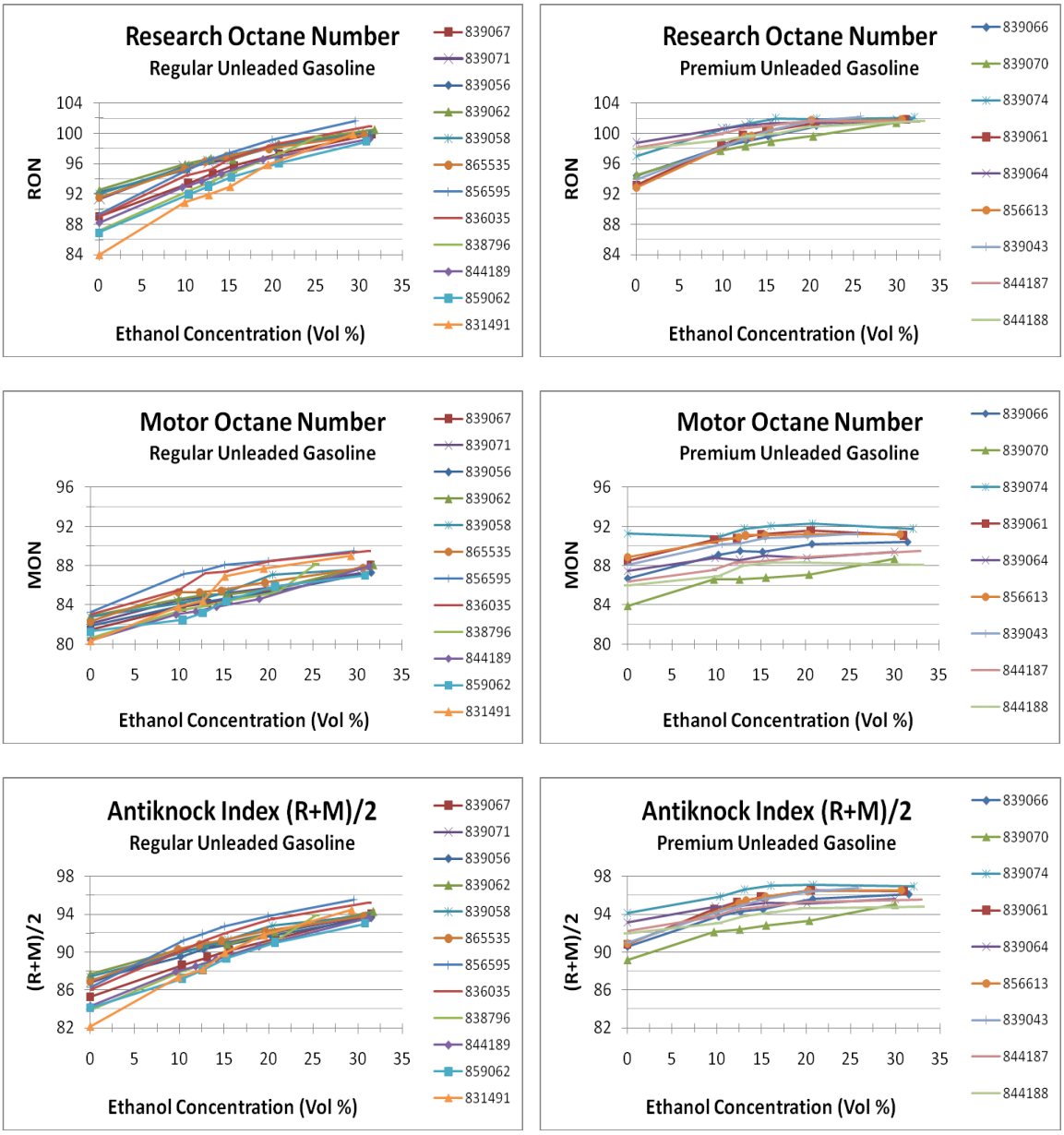


Figure 10
Increase in Octane Number with Ethanol Addition

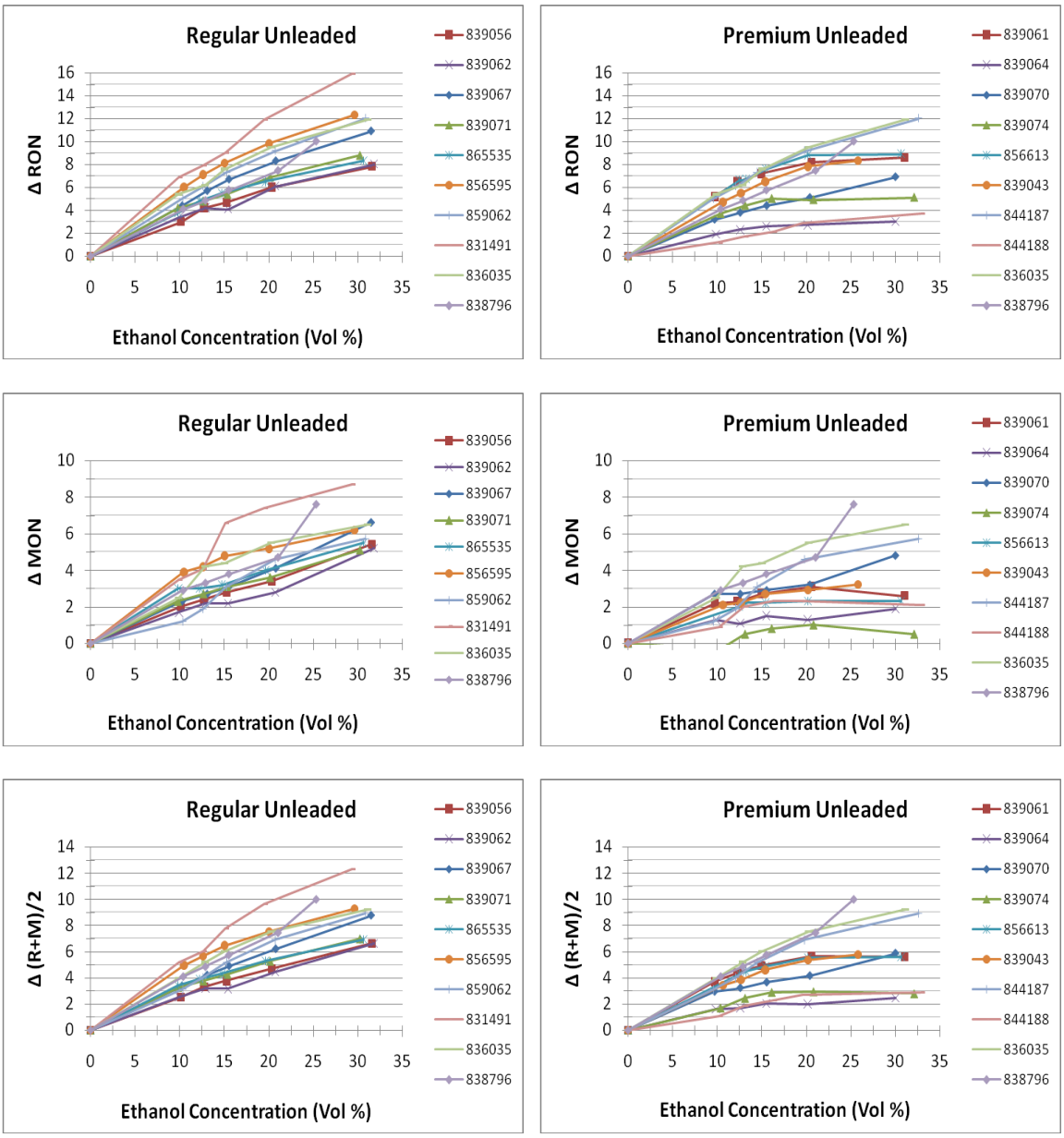
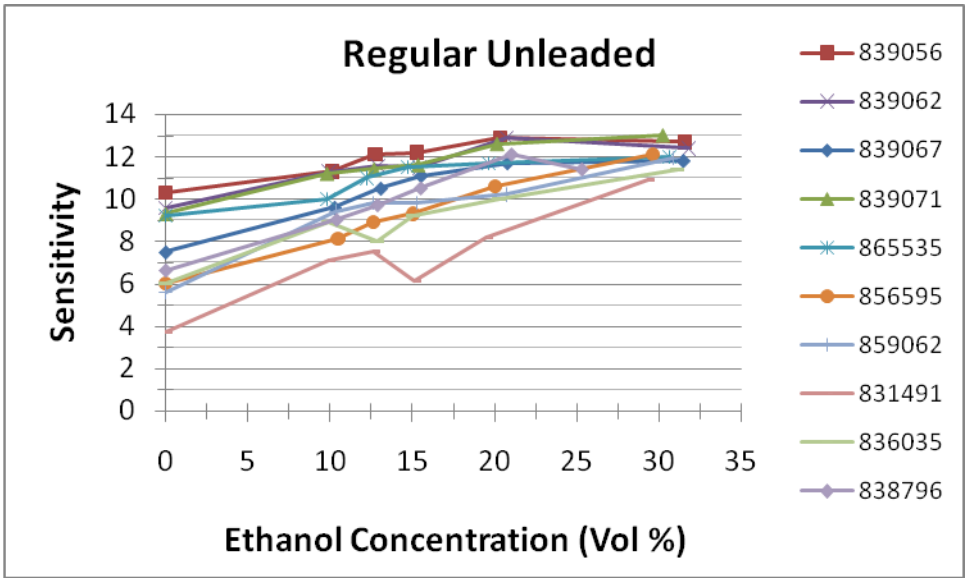
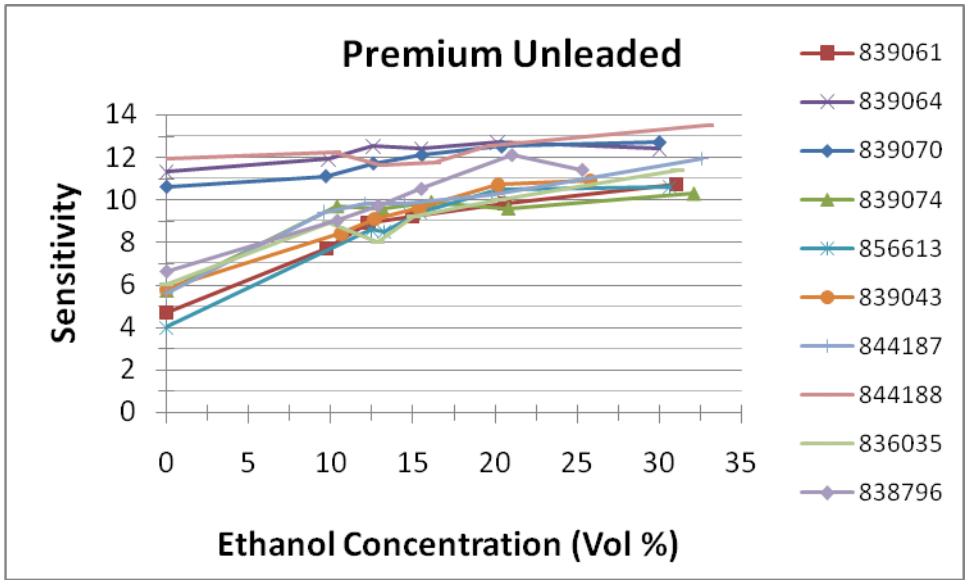


Figure 11
Effect of Ethanol Addition on Sensitivity





SUMMARY

Based on the measurements made in this study, with one exception, blending ethanol into gasoline at concentrations between 10% and 30% by volume should pose no additional challenge to meeting the volatility requirements in the current ASTM D4814-9b specifications. The one exception concerns minimum T_{50} specifications in volatility classes AA, A, B and C. ASTM D4814-9b specifies a lower minimum T_{50} for fuels containing 1-10% ethanol by volume than for hydrocarbon fuels (150^{o}F versus 170^{o}F, respectively). The 150ºF minimum T_{50} specification would need to be extended to allow any ethanol level above 10% by volume.

Vapor Pressure

- Vapor pressure typically rises with the addition of ethanol to gasoline. The increase is greatest at 10% by volume. At higher concentrations, the vapor pressure of the blend decreases.
- The magnitude of the vapor pressure increase associated with ethanol addition becomes greater as the base fuel vapor pressure decreases. For all ethanol levels, it rises steeply for blends produced with base gasoline fuels having vapor pressures below about 9.5-10.5 psi. Above this level, the vapor pressure of the base gasoline has minimal impact on the magnitude of vapor pressure increase from ethanol addition.

Distillation

- All levels of ethanol addition tend to lower the boiling temperatures in the mid-range and back-end of the distillation curve.
- At a given mid-range temperature (e.g., 200^{o}F), the percent of fuel evaporated generally increases in proportion to the amount of ethanol added to the base fuel.

Vapor-Liquid Ratio

- The addition of ethanol to gasoline at a concentration of 10% by volume significantly depresses the temperature for a vapor-liquid ratio of 20 ($T_{V/L=20}$). Additions of higher levels of ethanol generally result in either no change or a slight increase in the $T_{V/L=20}$.

Octane Number

- Addition of ethanol to gasoline increases the octane number of the blend. The rate of increase in octane number is:
    - Lower for premium unleaded base gasoline samples than for regular unleaded base gasoline samples;

- Relatively constant for ethanol blend concentrations ranging from zero up to about 20% by volume but may decline slightly at higher levels.

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4. Furey, R., and Perry, K., GM Research Lab, *Vapor Pressures of Mixtures of Gasolines and Gasoline-Alcohol Blends,* Society of Automotive Engineers, Paper 861557, October 1986
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Determination of the Potential Property Ranges of Mid-Level Ethanol Blends

APPENDIX A

FUEL BLEND VOLATILITY AND OCTANE MEASUREMENTS

American Petroleum Institute
1220 L St, NW
Washington, DC 20005

April 23, 2010

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839055	839199	839200	839201	839202	839203	839054	839194	839195	839196	839197	839198
Date	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08
Dry Vapor Pressure Equivalent (psi)	6.43	8.22	8.30	8.15	8.12	8.02	7.33	8.47	8.50	8.34	8.41	8.21
Specific Gravity	0.7563	0.7581	0.7582	0.7595	0.7590	0.7648	0.7514	0.7525	0.7532	0.7559	0.7562	0.7624
Ethanol (Vol%)	0.00	9.86	12.71	15.34	20.84	31.53	0.00	10.30	12.92	15.53	20.85	31.78
Ethanol (Wt%)	0.00	10.33	13.31	16.04	21.80	32.73	0.00	10.87	13.62	16.31	21.89	33.09
Distillation, D86 (^{o}F)												
IBP	92.9	103.0	100.3	99.3	99.8	103.4	99.2	99.2	98.7	99.8	99.7	100.4
1	100.4	104.5	105.4	105.2	105.7	108.5	103.7	102.6	103.4	104.4	103.6	105.9
2	107.8	105.7	110.6	111.2	111.6	113.7	108.2	106.1	108.2	109.0	107.5	111.4
3	115.2	112.9	115.7	117.1	117.5	118.8	112.7	109.5	112.1	113.6	111.6	116.7
4	124.0	119.5	120.5	121.7	122.5	123.4	116.8	113.7	115.1	117.1	115.7	119.8
5	131.4	123.0	123.5	125.3	126.0	127.4	120.0	116.3	117.5	119.2	118.5	121.7
6	136.8	126.2	126.5	127.8	129.1	130.8	123.0	118.7	119.3	120.9	120.5	123.4
7	141.6	129.0	129.4	130.5	131.7	133.6	125.4	120.2	120.8	122.4	122.3	125.1
8	146.1	131.2	131.8	132.9	133.9	136.2	127.5	121.7	122.2	123.7	123.8	126.7
9	150.1	133.1	133.8	134.9	136.1	138.3	129.4	122.7	123.3	124.8	125.1	128.0
10	153.4	135.3	135.4	136.8	138.0	140.4	131.0	123.7	124.4	126.0	126.3	129.2
11	156.9	137.2	136.8	138.5	139.7	142.2	132.5	124.5	125.4	127.0	127.3	130.1
12	160.3	138.8	138.4	140.1	141.3	143.8	134.1	125.4	126.3	127.8	128.1	130.7
13	163.6	140.3	140.4	141.6	142.8	145.3	135.5	126.1	127.1	128.7	129.1	131.9
14	166.8	142.1	141.9	143.0	144.2	146.8	137.0	127.0	127.8	129.4	129.9	132.9
15	170.0	143.3	143.3	144.4	145.8	148.0	138.4	127.8	128.7	130.1	130.9	134.1
16	172.7	144.8	144.7	145.7	147.3	149.2	139.8	128.7	129.4	130.9	131.7	135.5
17	175.8	145.8	145.9	146.9	148.6	150.5	141.1	129.3	130.2	131.9	132.6	136.5
18	178.7	146.8	147.1	148.2	149.7	151.7	142.4	130.2	131.2	132.8	133.4	137.5
19	181.7	148.2	148.3	149.3	150.8	152.8	143.8	131.2	132.2	133.6	134.4	138.6
20	184.6	149.3	149.6	150.4	151.8	153.7	145.4	132.1	133.1	134.4	135.3	139.7
21	187.1	150.3	150.5	151.2	152.8	154.6	146.9	133.0	134.0	135.5	136.1	140.9
22	189.5	151.4	151.5	152.3	153.6	155.4	148.3	133.8	134.7	136.5	137.1	141.9
23	191.8	152.0	152.3	153.2	154.4	156.2	149.9	134.6	135.4	137.3	138.2	142.9
24	194.0	152.7	152.7	153.9	155.2	157.0	151.4	135.7	136.5	138.0	139.2	143.9
25	195.9	153.5	153.7	154.6	156.0	157.5	152.9	136.5	137.5	138.9	140.1	145.0
26	198.0	154.3	154.7	155.3	156.6	158.1	154.7	137.6	138.4	139.7	140.9	145.9
27	199.8	155.0	155.5	156.0	157.3	158.7	156.5	138.6	139.3	140.6	141.7	147.0
28	201.7	155.7	156.1	156.7	157.9	159.3	158.1	139.4	140.3	141.6	142.5	148.0
29	203.5	156.1	156.8	157.4	158.5	159.8	159.9	140.3	141.0	142.5	143.6	149.0
30	205.0	156.6	157.4	157.9	158.9	160.2	161.7	141.2	141.8	143.4	144.7	149.9
31	206.6	157.6	157.9	158.3	159.5	160.8	163.6	141.9	143.0	144.2	145.7	151.1
32	208.1	158.3	158.3	158.8	160.1	161.2	165.9	142.7	143.9	145.0	146.4	152.0
33	209.7	158.4	159.1	159.3	160.5	161.5	168.1	143.5	144.9	146.0	147.3	153.1
34	210.9	159.0	159.5	159.8	160.9	161.8	170.4	144.3	146.0	146.9	148.3	153.8
35	212.2	159.1	160.2	160.2	161.3	162.2	172.7	145.0	146.7	147.8	149.2	154.8
36	213.5	160.7	160.6	160.8	161.6	162.5	175.0	146.0	147.5	148.7	150.1	155.7
37	214.5	162.5	160.7	161.1	162.0	162.8	177.2	146.4	148.5	149.4	150.9	156.4
38	215.3	167.5	161.6	161.4	162.4	163.1	179.5	147.4	149.4	150.2	152.0	157.1
39	216.4	172.4	162.5	161.9	162.8	163.3	182.0	148.1	150.2	151.1	152.8	157.9
40	217.6	177.8	163.8	162.6	163.1	163.6	184.5	149.1	150.8	152.0	153.5	158.6
41	218.6	185.5	164.8	162.9	163.6	163.9	187.3	149.9	151.4	152.7	154.4	159.6
42	219.3	194.4	166.6	163.6	163.8	164.1	190.2	150.4	152.2	153.3	155.0	160.3
43	220.1	200.6	169.1	164.2	163.9	164.3	193.0	150.9	153.0	154.1	155.9	161.0
44	221.0	204.7	173.2	165.0	164.2	164.6	195.6	151.7	153.7	155.1	156.7	161.6
45	222.0	208.9	179.1	166.2	164.6	164.8	198.4	151.9	154.5	155.8	157.4	162.2
46	222.7	211.3	187.2	167.4	164.8	165.0	201.4	153.0	155.1	156.5	158.3	162.6
47	223.6	213.7	196.9	169.6	164.8	165.1	204.2	154.3	155.9	157.1	159.1	163.1
48	224.5	216.0	204.2	173.1	164.8	165.2	207.1	155.3	156.9	157.7	159.9	163.8
49	225.7	218.0	209.4	179.0	164.8	165.5	210.1	157.1	157.5	158.3	160.7	164.4
50	226.3	220.0	212.7	188.4	164.9	165.7	212.9	161.6	158.0	158.9	161.4	164.9
51	226.4	222.0	215.1	199.2	165.3	165.9	216.0	168.1	159.3	159.5	162.1	165.4
52	227.1	223.2	217.2	207.0	165.8	166.0	219.4	175.3	161.5	159.9	162.5	165.7
53	228.3	224.2	219.2	212.9	165.9	166.2	222.7	183.3	163.9	160.4	162.7	166.1
54	229.8	224.7	221.1	215.9	166.1	166.3	226.1	191.9	167.1	161.1	163.1	166.7

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839055	839199	839200	839201	839202	839203	839054	839194	839195	839196	839197	839198
Date	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08
Distillation, D86 (^{o}F)												
55	231.0	224.5	222.4	218.8	167.2	166.3	229.5	200.4	172.1	161.8	163.5	167.1
56	231.9	226.1	223.7	220.9	168.6	166.5	232.9	207.3	180.5	161.9	164.0	167.4
57	232.6	227.3	225.6	222.6	170.5	166.8	236.5	214.0	192.2	162.4	164.6	167.7
58	234.0	227.7	227.1	224.6	176.1	166.9	240.0	219.3	203.7	165.9	165.1	168.0
59	235.5	228.5	227.8	226.4	190.3	166.9	243.3	223.6	213.1	174.6	165.6	168.3
60	236.3	229.4	227.9	227.8	207.5	167.1	246.6	228.3	220.2	190.4	165.9	168.8
61	236.9	230.8	228.1	228.5	216.6	167.3	250.3	231.8	225.8	207.1	166.2	169.1
62	237.8	231.5	228.8	229.5	220.6	167.5	254.1	235.4	230.9	218.4	166.6	169.4
63	238.6	233.4	229.6	230.1	222.5	167.6	257.6	239.0	235.5	227.7	167.1	169.9
64	239.8	235.4	230.5	232.0	224.3	167.7	261.4	243.7	240.0	235.6	167.2	170.1
65	241.0	236.8	232.1	233.6	226.5	167.9	265.0	247.5	244.2	241.5	168.3	170.5
66	242.2	237.9	234.1	233.3	229.0	168.1	268.9	251.2	248.3	246.5	176.0	170.8
67	243.4	238.9	235.3	235.0	231.6	168.4	272.1	253.7	252.0	251.3	201.0	171.2
68	244.8	240.0	236.0	237.0	233.8	168.8	275.5	257.5	246.2	255.4	227.6	171.4
69	246.3	241.3	236.8	238.8	235.6	169.0	279.4	264.0	247.7	259.4	239.2	171.7
70	247.9	243.2	238.2	240.0	237.0	169.4	283.3	268.5	257.9	263.9	245.9	172.2
71	249.9	244.8	240.4	240.7	238.2	170.5	287.0	272.4	266.3	268.3	251.6	172.5
72	251.7	246.2	242.7	241.0	239.4	172.4	290.8	276.5	272.6	272.1	256.7	173.3
73	253.6	247.9	244.3	241.7	240.8	186.4	294.8	281.1	277.8	273.4	262.5	173.3
74	255.7	249.4	243.6	244.0	242.1	212.7	298.2	284.9	282.2	275.6	268.1	173.2
75	257.8	251.2	244.2	246.7	243.4	228.5	301.4	289.2	285.5	281.0	274.5	181.1
76	260.3	253.8	247.6	249.6	245.4	232.3	304.1	292.4	288.5	286.7	280.2	249.1
77	263.3	256.9	251.6	252.2	247.4	235.3	306.3	296.8	292.5	292.3	285.3	262.3
78	266.4	259.9	255.2	254.9	249.0	238.4	311.7	300.7	297.7	297.1	287.4	270.5
79	269.8	263.4	258.0	257.6	251.5	241.9	315.9	304.8	303.0	301.4	285.8	278.4
80	273.5	266.2	261.1	260.3	254.6	245.9	318.9	308.8	307.8	305.6	288.3	286.0
81	277.6	269.3	264.2	263.2	257.7	249.9	321.6	312.2	311.8	310.1	296.0	291.9
82	282.0	273.1	268.0	266.8	261.1	253.4	324.5	315.8	315.4	314.2	304.1	297.2
83	286.9	278.1	273.0	271.1	264.6	257.3	327.4	319.2	318.5	318.0	310.1	302.7
84	292.8	282.6	278.2	275.9	268.8	261.4	329.6	322.7	321.8	321.3	315.1	307.7
85	299.4	288.6	283.5	281.2	274.0	265.7	332.2	322.6	324.9	324.4	319.7	312.4
86	306.6	294.3	290.3	287.4	279.9	270.2	335.0	327.0	328.0	327.8	323.5	315.9
87	313.7	302.0	298.8	293.5	286.4	275.3	337.8	331.9	331.4	331.1	326.8	320.2
88	320.7	311.0	307.7	302.5	294.6	281.6	340.6	336.0	332.4	333.6	329.6	324.0
89	323.5	319.6	316.0	312.0	304.5	289.0	343.6	339.4	335.3	336.4	332.3	327.9
90	330.5	325.2	323.4	319.1	314.0	298.0	346.9	343.2	340.2	340.6	335.1	332.1
91	337.6	331.1	327.5	325.2	322.6	308.2	350.5	346.6	344.7	345.5	339.6	337.0
92	342.7	338.4	334.0	333.3	329.7	318.7	354.4	350.5	349.2	349.4	344.2	341.6
93	347.8	343.8	341.1	339.7	336.3	327.9	358.4	354.1	353.9	353.5	349.1	346.7
94	353.6	350.4	347.9	346.4	343.6	335.2	363.7	356.5	359.1	358.8	354.2	352.1
95	360.4	357.9	354.7	353.1	351.3	342.8	370.0	363.4	365.0	364.8	361.2	358.2
96	369.4	366.0	362.7	361.5	360.2	352.3	377.6	372.2	372.3	372.3	368.7	366.4
97	383.0	379.9	374.2	374.6	373.1	364.5	388.7	383.7	381.8	383.3	379.1	377.1
98	405.7	401.4	394.0	395.0	393.9	382.3	406.2	398.3	394.7	398.1	392.9	
99												
FBP	425.1	414.4	414.1	411.7	410.2	402.1	424.5	413.8	406.2	410.4	405.7	403.9
Recovered (%)	97.0	98.8	97.3	97.4	97.0	97.2	96.7	97.5	98.0	97.3	97.8	97.6
Residue (%)	0.9	1.0	0.9	0.9	0.9	0.8	0.9	0.8	0.8	0.8	0.8	0.9
Loss (%)	2.1	0.2	1.8	1.7	2.1	2.0	2.4	1.7	1.2	1.9	1.4	1.5
$T_{V/L=20}$ (^{o}F)	169.6	139.1	139.1	139.7	138.9	140.5	149.8	131.7	131.6	131.5	132.3	133.3
RON												
MON												
(R+M)/2												

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839057	839209	839210	839211	839212	839213	839056	839204	839205	839206	839207	839208
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08
Dry Vapor Pressure Equivalent (psi)	6.74	8.28	8.30	8.22	8.04	7.87	7.65	9.05	9.04	8.98	8.92	8.74
Specific Gravity	0.7458	0.7472	0.7480	0.7489	0.7536	0.7563	0.7477	0.7498	0.7496	0.7473	0.7533	0.7590
Ethanol (Vol%)	0.00	9.97	12.59	15.06	22.62	31.63	0.00	10.14	12.71	15.25	20.33	31.53
Ethanol (Wt%)	0.00	10.59	13.36	15.96	23.83	33.20	0.00	10.73	13.46	16.20	21.43	32.98
Distillation, D86 (^{o}F)												
IBP	95.7	97.2	99.6	98.1	101.1	101.5	96.9	94.5	95.2	95.1	95.8	97.6
1	104.9	103.7	105.6	103.9	106.8	107.0	101.5	99.1	99.9	98.6	101.7	101.6
2	114.0	110.2	111.5	109.6	112.5	112.6	106.0	103.7	104.6	102.2	107.6	105.6
3	122.5	116.7	117.3	115.3	118.2	118.1	110.5	108.1	109.1	105.7	112.1	109.7
4	129.8	120.4	122.0	120.0	122.7	123.5	114.8	111.6	112.4	109.4	115.0	113.9
5	135.7	123.6	124.9	123.9	126.5	128.2	118.2	114.0	114.6	113.0	117.2	116.7
6	140.3	126.1	127.8	127.1	129.8	131.7	121.1	115.9	116.4	115.6	119.1	119.2
7	144.7	128.5	130.6	129.7	132.8	134.5	123.6	117.5	117.9	117.5	120.8	121.3
8	148.7	130.4	132.3	132.2	134.7	136.9	125.9	119.0	119.1	119.1	122.3	123.0
9	152.2	131.8	134.4	134.2	136.7	139.1	127.8	120.2	120.4	120.6	123.5	124.6
10	155.6	133.7	136.2	136.1	138.8	141.1	129.5	121.6	121.4	121.8	124.6	126.0
11	158.9	135.7	137.8	137.8	140.7	142.9	131.0	122.6	122.5	122.9	125.6	127.4
12	161.9	137.4	139.4	139.6	142.4	144.5	132.8	123.6	123.5	124.0	126.5	128.5
13	165.0	138.9	141.0	141.0	143.7	146.1	134.3	124.3	124.6	125.0	127.4	129.8
14	168.1	140.5	142.2	142.1	145.3	147.4	135.9	125.2	125.5	126.0	128.2	130.8
15	171.2	142.0	143.6	143.9	146.8	148.6	137.2	125.8	126.1	127.0	129.2	131.9
16	174.1	143.4	144.6	145.2	148.0	149.8	138.6	126.8	127.2	128.0	130.3	133.0
17	176.8	144.5	145.9	146.3	149.2	151.0	140.1	127.6	128.2	129.1	131.4	134.0
18	179.5	145.9	147.1	147.6	150.3	152.1	141.6	128.5	129.2	130.0	132.3	135.2
19	182.2	147.3	148.0	148.8	151.5	153.1	143.2	129.5	130.2	130.9	133.3	136.4
20	184.7	148.5	149.3	149.9	152.4	154.0	144.6	130.3	131.2	131.8	134.2	137.4
21	187.3	149.6	150.3	150.9	153.3	154.8	146.1	131.1	132.3	132.8	135.3	138.4
22	189.8	150.9	151.1	151.7	153.8	155.6	147.5	132.0	133.2	134.0	136.5	139.4
23	192.2	151.8	152.2	152.4	154.6	156.4	149.3	132.9	134.1	135.0	137.5	140.6
24	194.7	152.7	152.8	153.1	155.6	157.1	150.8	133.8	135.0	136.0	138.5	141.7
25	196.9	153.5	153.6	153.9	156.4	157.7	152.5	134.6	135.7	137.0	139.4	142.9
26	199.0	154.5	154.3	154.8	156.9	158.3	154.3	135.6	136.5	137.8	140.4	143.8
27	201.0	155.2	155.0	155.5	157.8	158.9	156.1	136.5	137.4	138.7	141.4	144.8
28	203.1	155.8	155.8	156.2	158.5	159.5	157.9	137.4	138.5	139.8	142.4	146.0
29	205.2	156.5	156.4	156.9	158.9	160.0	159.8	138.4	139.6	140.7	143.4	147.0
30	206.9	157.2	157.1	157.5	159.3	160.5	162.0	139.3	140.6	141.7	144.3	148.1
31	208.7	157.8	157.8	158.1	160.2	161.0	163.7	140.2	141.4	142.6	145.2	149.0
32	210.3	158.3	158.2	158.4	160.5	161.4	166.0	141.1	142.4	143.5	146.2	150.2
33	211.7	159.0	158.7	159.1	161.1	161.9	168.2	142.2	143.3	144.4	147.1	151.2
34	213.4	159.8	159.4	159.8	161.5	162.4	170.6	143.0	144.3	145.4	148.2	152.1
35	215.0	160.5	159.9	160.1	161.9	162.7	172.8	143.7	145.1	146.5	149.1	153.2
36	216.3	162.0	160.4	160.4	162.4	162.9	175.3	144.7	145.9	147.4	149.9	154.0
37	217.6	164.6	160.9	161.1	162.8	163.2	177.4	145.6	146.8	148.2	150.8	154.9
38	218.8	168.0	161.3	161.6	163.0	163.6	179.9	146.3	147.9	149.0	151.9	155.7
39	220.0	172.2	161.7	161.9	163.2	163.8	182.7	147.4	148.8	149.9	152.7	156.6
40	221.1	177.8	162.5	162.5	163.6	164.0	185.3	148.1	149.6	150.7	153.5	157.4
41	222.2	186.6	163.9	163.0	163.8	164.4	188.0	148.9	150.5	151.5	154.4	158.2
42	223.4	195.8	166.3	163.0	164.3	164.7	190.7	149.7	151.5	152.4	155.2	159.0
43	224.6	203.5	168.4	163.2	164.5	164.9	193.4	150.5	152.3	153.3	155.8	159.8
44	225.5	209.1	173.5	164.3	164.7	165.1	195.9	151.5	153.1	154.0	156.7	160.6
45	226.2	213.3	180.2	164.7	164.9	165.3	198.7	152.2	153.7	154.7	157.5	161.3
46	227.1	216.0	190.3	165.4	165.2	165.5	201.7	152.6	154.5	155.6	158.1	161.9
47	228.1	218.1	199.9	167.3	165.4	165.6	204.8	153.2	155.2	156.4	158.8	162.5
48	229.1	220.0	208.0	170.7	165.6	165.8	207.6	154.8	155.8	157.0	159.4	162.7
49	230.0	221.8	213.7	177.8	166.0	166.0	210.5	157.3	156.3	157.7	159.9	163.1
50	230.8	223.2	217.7	189.1	166.2	166.1	213.5	160.2	157.1	158.3	160.6	163.5
51	231.7	225.0	219.9	201.0	166.1	166.3	216.3	165.6	157.5	158.9	161.5	164.1
52	232.6	226.8	222.0	210.5	166.6	166.4	219.0	172.1	158.1	159.5	162.2	164.6
53	233.4	228.1	224.6	216.3	166.9	166.6	222.3	181.6	159.5	160.0	162.7	165.0
54	234.2	228.9	226.1	220.2	167.0	166.9	225.3	192.7	161.1	160.5	163.0	165.5

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839057	839209	839210	839211	839212	839213	839056	839204	839205	839206	839207	839208
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08
Distillation, D86 (^{o}F)												
55	235.2	228.4	226.7	223.0	167.2	167.0	228.5	200.7	163.3	161.1	163.2	165.9
56	236.1	226.9	227.3	225.7	167.8	167.2	231.3	207.6	168.7	161.6	163.7	166.3
57	236.6	228.5	227.9	227.4	168.0	167.4	234.2	212.5	179.9	161.8	164.6	166.8
58	237.2	231.3	229.8	228.2	168.3	167.5	237.4	217.7	194.9	162.3	165.3	167.0
59	238.2	233.1	231.2	229.2	169.0	167.7	240.5	222.2	207.6	164.8	165.4	167.3
60	239.3	232.9	231.6	230.7	168.2	167.8	243.3	226.1	217.1	171.3	165.9	167.7
61	240.5	232.5	232.5	232.2	170.6	167.9	246.1	229.6	223.8	184.9	167.0	167.9
62	241.6	233.3	233.4	233.9	183.8	168.0	248.8	233.0	228.4	202.5	167.9	168.1
63	242.5	234.9	234.7	234.9	212.9	168.0	251.8	236.6	232.4	215.6	168.4	168.6
64	243.7	236.5	236.2	235.6	223.8	168.3	255.1	239.2	236.1	223.4	168.0	168.8
65	244.9	238.1	236.2	236.3	227.3	168.7	257.9	242.6	239.9	229.1	167.9	168.9
66	246.0	239.8	236.3	236.9	230.2	168.9	260.5	246.1	243.8	234.4	172.5	168.6
67	246.9	241.6	238.9	237.4	232.7	169.1	263.1	249.2	247.9	239.7	194.6	169.3
68	248.1	243.5	241.8	238.8	235.4	169.5	266.2	252.7	251.8	244.5	219.0	169.8
69	249.6	245.1	243.6	239.3	237.8	169.9	269.7	256.1	255.5	248.9	232.3	170.4
70	251.3	246.5	245.2	238.2	239.9	170.2	273.2	259.2	258.2	253.3	240.1	170.9
71	253.0	247.7	246.6	239.7	241.4	171.3	276.9	261.9	260.6	256.6	246.5	171.2
72	254.5	248.7	248.0	242.7	243.2	175.2	280.3	266.3	264.1	259.6	252.2	171.5
73	256.3	249.9	249.3	245.7	245.1	200.2	283.8	270.5	267.9	263.4	257.9	172.1
74	258.1	251.1	250.9	248.3	246.6	227.5	287.4	274.1	271.8	266.9	262.9	172.6
75	260.0	252.6	252.4	250.7	248.3	234.8	291.1	277.6	275.9	270.3	267.4	172.6
76	262.3	254.5	254.3	252.3	249.7	238.5	294.5	281.1	279.4	274.3	272.0	176.3
77	265.0	256.8	256.2	252.4	251.2	242.0	298.1	284.7	283.2	278.8	276.2	206.5
78	267.7	259.3	258.3	251.8	253.0	245.3	302.1	289.2	287.9	283.6	280.1	252.3
79	270.4	261.9	260.5	254.4	254.4	248.5	306.0	293.4	292.4	288.6	284.1	262.1
80	273.4	264.7	262.9	258.6	257.1	251.5	309.9	297.6	296.9	293.2	288.7	269.9
81	276.5	267.9	265.5	262.7	259.6	254.3	313.4	302.7	301.2	297.5	289.9	276.6
82	279.8	270.8	268.8	267.0	261.2	257.0	317.2	307.4	305.6	302.6	291.6	283.1
83	283.6	274.8	272.8	270.4	264.8	260.0	320.8	311.8	309.6	307.2	297.8	288.3
84	287.4	278.7	276.5	274.1	267.4	263.0	323.0	315.7	313.0	311.3	305.6	294.2
85	291.7	283.0	279.5	277.9	272.1	266.1	324.1	319.4	315.6	315.7	312.5	297.5
86	296.3	288.2	284.0	282.5	277.2	269.8	330.3	323.2	319.9	319.8	318.1	303.8
87	301.5	293.4	289.3	287.7	282.6	274.2	334.8	326.0	325.9	323.9	322.7	309.8
88	307.1	299.2	295.0	293.4	289.3	279.4	339.0	326.3	330.7	326.9	326.8	315.7
89	312.8	304.7	301.4	299.7	294.2	285.5	342.3	334.7	335.0	329.7	330.9	321.9
90	318.3	310.9	307.7	305.7	301.5	292.5	346.1	340.0	339.1	334.7	335.5	326.8
91	323.3	317.3	314.3	312.3	309.5	300.0	350.2	344.4	343.7	340.2	340.3	331.5
92	328.7	323.2	321.0	318.7	316.4	308.3	354.0	348.9	348.0	345.2	345.6	337.4
93	335.1	327.4	326.4	322.9	323.4	316.8	358.7	354.0	353.0	350.6	350.6	343.0
94	340.5	334.5	330.3	330.5	329.2	324.5	364.9	359.9	359.1	356.8	356.0	349.0
95	346.9	341.5	339.1	338.4	337.2	331.6	371.5	367.4	366.6	363.8	361.8	356.5
96	354.0	349.8	347.0	346.2	345.2	339.3	381.0	376.6	375.9	372.2	372.1	365.5
97	363.5	356.2	355.5	354.7	354.7	349.6	392.6	386.2	388.8	384.2	386.7	376.3
98	377.8	373.4	371.1	371.2	366.6	364.9	408.3	399.9	404.5	400.1	403.5	390.5
99												
FBP	392.7	386.6	388.6	387.4	385.0	382.2	419.6	418.0	414.7	413.4	410.8	406.5
Recovered (%)	97.7	97.5	97.9	97.5	97.7	97.4	97.3	97.8	97.9	97.3	98.0	98.0
Residue (%)	0.8	0.7	0.6	0.7	0.8	0.7	0.9	0.7	0.8	0.7	0.8	0.5
Loss (%)	1.5	1.8	1.5	1.8	1.5	1.9	1.8	1.5	1.3	2.0	1.2	1.5
$T_{V/L=20}$ (^{o}F)	167.2	138.9	140.4	139.9	139.6	140.6	147.1	128.2	128.3	128.4	129.2	130.5
RON							92.2	95.2	96.4	96.9	98.2	100.0
MON							81.9	83.9	84.3	84.7	85.3	87.3
(R+M)/2							87.1	89.6	90.4	90.8	91.8	93.7

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839061	839229	839230	839231	839232	839233	839060	839224	839225	839226	839227	839228
Date	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08
Dry Vapor Pressure Equivalent (psi)	7.21	8.38	8.30	8.32	8.19	7.94	7.05	8.61	8.48	8.55	8.46	8.22
Specific Gravity	0.7196	0.7259	0.7182	0.7288	0.7331	0.7398	0.7574	0.7553	0.7558	0.7579	0.7597	0.7653
Ethanol (Vol%)	0.00	9.73	12.27	14.97	20.57	31.00	0.00	10.32	12.88	15.40	20.46	31.50
Ethanol (Wt%)	0.00	10.64	13.57	16.31	22.27	33.27	0.00	10.85	13.53	16.14	21.38	32.67
Distillation, D86 (^{o}F)												
IBP	96.6	101.1	101.2	101.9	104.1	109.7	96.1	99.3	101.2	97.3	100.1	102.6
1	99.3	105.6	106.2	107.0	109.6	114.2	109.4	103.8	104.2	101.2	104.4	108.8
2	102.1	110.1	111.3	112.1	115.1	118.7	120.1	108.2	107.2	105.2	108.8	115.0
3	104.8	114.6	116.4	117.2	120.7	123.2	124.5	112.7	110.2	109.1	113.2	119.9
4	107.6	119.1	121.6	121.9	125.0	128.0	128.1	117.2	115.1	114.3	117.4	123.0
5	110.3	123.3	124.7	125.1	127.9	132.2	131.3	120.0	119.1	118.4	120.5	125.9
6	113.0	126.2	127.5	128.2	130.6	135.1	134.1	121.9	121.6	121.3	122.8	128.7
7	124.6	128.4	130.2	130.7	133.1	137.4	136.9	124.0	123.9	123.7	125.2	130.9
8	130.6	130.7	132.3	132.7	135.3	139.5	139.4	125.7	126.1	125.8	127.2	132.7
9	136.4	132.8	133.9	134.7	137.2	140.9	141.7	127.6	127.8	127.7	129.3	134.2
10	141.4	134.8	135.8	136.6	138.8	141.8	144.0	129.3	129.4	129.4	130.9	135.6
11	145.9	136.9	137.5	138.2	140.3	142.7	146.2	130.5	130.8	130.8	132.1	137.1
12	149.8	138.0	139.0	139.6	141.8	143.7	148.1	131.7	132.0	132.2	133.3	138.3
13	153.5	140.1	140.3	140.8	143.0	144.9	150.0	133.0	133.3	133.5	134.4	139.5
14	157.2	141.1	141.6	142.2	144.3	146.2	151.8	134.1	134.5	134.7	135.6	140.7
15	160.8	142.8	142.7	143.6	145.5	147.5	153.8	135.1	135.4	135.4	136.7	142.0
16	164.0	143.7	143.6	144.7	146.5	148.7	155.8	136.0	136.5	136.5	137.9	143.2
17	167.2	144.9	145.0	146.0	147.7	149.9	157.5	136.5	137.6	137.6	139.2	144.2
18	170.5	145.9	146.1	147.0	148.8	151.0	159.3	137.8	138.5	138.8	140.5	145.2
19	173.6	147.1	147.1	148.1	149.8	151.9	161.2	139.1	139.6	139.9	141.7	146.1
20	176.6	148.1	148.0	149.0	150.7	152.9	163.1	139.9	140.6	140.9	142.7	147.2
21	179.2	148.9	149.1	150.2	151.5	153.8	165.0	140.8	141.6	142.0	143.6	148.2
22	181.6	149.6	149.8	151.1	152.2	154.3	166.8	141.7	142.6	142.8	144.5	149.1
23	184.5	150.4	150.9	152.0	152.9	154.9	168.7	142.7	143.4	143.5	145.5	150.0
24	186.8	151.1	151.6	152.8	153.6	155.7	170.8	143.6	144.3	144.5	146.6	150.9
25	189.4	151.8	152.3	153.4	154.3	156.4	172.7	144.5	145.3	145.4	147.5	151.8
26	191.8	152.4	153.1	154.1	155.0	156.9	174.8	145.4	146.4	146.3	148.3	152.7
27	193.9	152.7	153.9	154.8	155.7	157.6	176.9	146.1	147.4	147.1	149.1	153.3
28	196.2	154.0	154.5	155.5	156.4	158.2	178.9	146.6	148.3	147.9	150.0	153.9
29	197.9	154.6	155.1	156.1	157.0	158.6	180.9	147.4	148.8	148.8	150.8	154.7
30	199.8	155.5	155.8	156.7	157.5	159.1	182.9	147.9	149.6	149.5	151.4	155.5
31	201.8	156.4	156.6	157.3	157.8	159.5	185.1	148.8	150.2	150.2	152.3	156.1
32	203.4	157.1	157.2	157.8	158.2	159.9	187.0	149.5	150.8	150.9	153.0	156.8
33	205.1	157.8	157.6	158.2	158.8	160.4	189.0	150.6	151.5	151.5	153.7	157.2
34	206.7	159.0	157.9	158.6	159.3	160.8	191.3	151.4	152.4	152.4	154.3	157.7
35	208.1	159.7	158.6	159.2	159.6	161.1	193.4	152.5	152.9	153.1	155.0	158.4
36	209.6	160.3	159.2	159.6	159.9	161.4	195.3	153.2	153.6	153.7	155.7	159.1
37	210.9	162.6	160.0	159.8	160.4	161.7	197.2	153.4	154.2	154.3	156.5	159.8
38	212.2	164.6	160.5	160.5	160.7	162.1	199.4	154.4	154.9	155.1	157.2	160.2
39	213.4	167.9	161.1	161.0	161.0	162.3	201.5	154.6	155.5	155.8	157.7	160.6
40	214.8	172.6	161.8	161.4	161.4	162.6	203.6	155.3	156.1	156.4	158.1	161.2
41	215.7	181.5	162.8	161.6	161.7	162.8	205.6	155.9	156.7	157.0	158.7	161.6
42	216.8	192.9	164.1	162.0	161.9	163.0	207.8	157.6	157.2	157.6	159.1	162.0
43	218.0	199.7	166.0	162.6	162.0	163.3	209.9	157.2	157.7	158.0	159.5	162.4
44	218.9	205.2	168.8	163.0	162.2	163.6	211.9	160.4	158.3	158.4	160.1	162.9
45	220.0	209.0	172.9	163.7	162.6	163.8	214.1	166.3	159.1	158.8	160.5	163.3
46	221.0	211.8	179.9	164.7	162.8	163.9	216.1	173.0	160.4	159.0	160.8	163.7
47	221.8	213.9	191.0	165.8	163.0	164.1	218.2	179.9	161.3	159.7	161.7	164.1
48	222.7	215.3	200.7	167.8	163.1	164.4	220.4	187.7	163.4	160.1	162.4	164.5
49	223.5	217.0	207.3	170.2	163.6	164.6	222.5	194.2	167.2	160.7	162.6	165.1
50	224.4	218.9	211.8	173.5	164.0	164.7	224.6	199.4	172.2	161.3	163.5	165.5
51	225.5	220.6	214.9	180.8	164.3	164.9	226.7	204.7	179.3	161.5	164.2	165.7
52	226.1	222.0	217.2	193.3	164.7	165.1	228.8	209.4	189.2	162.3	164.3	165.9
53	227.0	223.1	219.0	206.4	164.8	165.3	231.0	213.3	197.7	163.5	164.8	166.3
54	228.1	224.2	220.6	213.6	165.2	165.5	233.4	216.9	205.8	167.6	165.2	166.7

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839061	839229	839230	839231	839232	839233	839060	839224	839225	839226	839227	839228
Date	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08
Distillation, D86 (^{o}F)												
55	228.7	225.0	222.2	217.4	165.8	165.7	235.6	220.2	212.0	175.0	165.6	167.0
56	229.5	225.7	223.5	219.8	166.6	165.9	237.8	223.1	216.9	184.7	166.0	167.4
57	230.0	226.3	224.4	221.9	167.6	166.0	240.2	225.7	221.2	197.0	166.7	167.7
58	231.4	226.7	225.2	223.4	169.0	166.1	242.6	228.6	224.9	207.7	167.8	167.9
59	232.3	227.2	226.3	224.8	172.5	166.3	244.9	230.9	228.5	215.7	168.9	168.2
60	233.4	227.1	226.9	226.2	182.9	166.4	246.8	233.4	231.5	221.9	170.3	168.3
61	234.3	228.2	227.5	227.6	201.7	166.6	249.2	236.1	234.3	226.8	172.0	168.6
62	235.3	230.1	227.8	229.1	216.4	166.9	251.5	237.7	237.2	231.0	176.1	168.9
63	236.1	229.7	228.8	231.0	221.7	167.0	253.5	239.8	239.6	234.4	186.9	169.3
64	236.9	228.7	230.8	232.7	224.4	167.1	255.5	243.0	241.4	237.7	205.7	169.5
65	237.9	230.7	232.7	233.6	226.7	167.3	258.1	245.5	244.5	240.8	222.2	169.9
66	238.9	232.7	233.3	232.4	228.9	167.5	260.8	247.8	247.5	243.9	231.5	170.2
67	239.6	234.0	233.2	231.9	230.7	167.6	263.5	251.2	250.0	247.2	237.4	170.5
68	240.7	235.5	233.2	233.4	232.0	167.9	265.6	254.0	252.4	249.8	241.9	170.8
69	242.1	238.1	235.4	235.2	233.3	168.0	267.9	256.4	255.1	252.1	245.8	171.2
70	243.4	240.4	238.2	236.8	234.3	168.4	270.2	259.0	257.4	254.4	249.2	171.6
71	245.0	241.9	240.1	237.2	235.7	168.8	272.5	261.7	260.4	255.9	252.5	172.1
72	246.4	241.4	241.6	237.8	237.1	169.0	275.3	264.4	263.4	258.8	255.5	172.6
73	247.6	238.4	243.2	240.4	237.4	169.4	277.8	267.4	265.8	262.6	258.9	172.2
74	249.0	240.0	244.8	242.1	238.9	171.0	280.1	270.2	268.2	265.2	262.9	207.4
75	250.5	244.2	246.4	241.9	240.7	184.9	282.5	272.9	271.6	267.1	266.4	239.2
76	252.3	248.0	248.0	243.4	240.3	214.5	285.1	275.3	275.1	270.7	268.9	249.9
77	254.2	250.4	249.3	246.7	241.1	233.7	287.3	278.3	277.6	274.6	269.9	254.8
78	256.0	252.6	250.4	249.1	244.5	237.0	290.0	281.8	279.8	277.7	271.4	260.2
79	258.4	254.3	251.7	250.2	246.1	239.5	292.6	284.4	283.0	280.9	275.2	265.6
80	260.9	255.2	253.7	251.2	247.1	242.4	295.3	287.6	286.5	284.0	279.7	270.3
81	263.5	256.8	256.2	253.5	250.2	245.2	297.8	290.5	289.6	286.8	283.6	273.9
82	266.3	259.2	259.1	256.6	253.9	248.1	300.3	293.4	292.1	289.4	286.2	277.4
83	269.6	262.6	262.1	259.9	257.1	251.1	302.8	296.4	294.8	292.2	287.5	281.5
84	273.1	265.9	265.0	262.9	260.4	254.7	305.4	299.1	297.8	295.7	289.0	285.2
85	276.8	270.1	268.5	265.8	263.3	258.0	307.5	301.9	300.7	299.0	293.7	288.6
86	281.5	274.2	272.2	269.2	265.6	260.5	309.6	300.6	302.7	300.6	299.3	292.0
87	286.4	278.8	275.8	273.5	268.0	264.2	312.9	307.5	304.6	303.4	302.3	295.5
88	291.8	283.9	279.7	279.0	271.9	268.9	316.9	312.1	308.9	307.8	304.3	299.7
89	298.1	289.9	285.2	285.1	278.1	273.7	320.2	315.5	313.4	311.7	308.6	304.0
90	305.9	296.9	292.3	292.4	285.5	278.8	323.7	319.1	317.6	315.4	313.6	307.4
91	313.9	304.8	300.2	300.2	293.6	285.9	327.1	322.3	321.5	319.2	317.7	311.2
92	322.7	312.4	309.6	308.0	302.2	295.2	330.8	325.6	325.2	322.8	320.2	315.9
93	329.0	321.6	317.8	317.6	311.2	305.2	334.9	329.1	329.6	326.0	324.0	321.5
94	337.6	330.7	325.5	327.2	321.2	316.3	339.6	333.9	333.9	331.3	329.8	327.1
95	347.0	338.6	337.7	336.5	331.5	328.1	345.0	340.1	339.2	337.6	336.2	333.4
96	362.5	350.4	348.4	347.2	341.1	340.5	352.2	347.1	346.9	344.3	343.4	339.0
97	381.3	362.6	360.8	360.2	353.3	354.6	362.2	355.8	356.0	353.7	350.7	348.0
98	406.8		380.7	376.8	370.1	372.5	375.9	369.8	365.7	368.7	366.4	363.6
99												
FBP	408.1	391.9	390.4	390.1	386.4	384.0	390.9	393.8	383.5	385.1	381.0	381.7
Recovered (%)	94.6	96.7	97.3	96.8	98.0	97.1	98.3	96.9	97.4	97.4	97.3	98.1
Residue (%)	1.2	1.0	1.0	1.0	0.8	0.9	1.0	0.8	0.8	0.7	0.8	0.8
Loss (%)	4.2	2.3	1.7	2.2	1.2	2.0	0.7	2.3	1.8	1.9	1.9	1.1
$T_{V/L=20}$ (^{o}F)	162.5	137.9	137.8	137.7	138.4	140.2	157.2	134.7	134.4	134.5	134.7	137.7
RON	93.2	98.4	99.7	100.4	101.4	101.8						
MON	88.5	90.7	90.8	91.2	91.6	91.1						
(R+M)/2	90.9	94.6	95.3	95.8	96.5	96.5						

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839062	839234	839235	839236	839237	839238	839064	839244	839245	839246	839247	839248
Date	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Dry Vapor Pressure Equivalent (psi)	7.18	8.51	8.51	8.49	8.47	8.19	7.10	8.24	8.11	8.20	7.95	7.85
Specific Gravity	0.7516	0.7532	0.7540	0.7554	0.7589	0.7631	0.7599	0.7508	0.7603	0.7602	0.7617	0.7657
Ethanol (Vol%)	0.00	9.91	12.89	15.41	20.73	31.78	0.00	9.86	12.58	15.51	20.16	30.00
Ethanol (Wt%)	0.00	10.45	13.57	16.19	21.68	33.07	0.00	10.43	13.14	16.19	21.01	31.11
Distillation, D86 (^{o}F)												
IBP	94.1	96.3	100.4	96.4	100.1	99.6	95.3	96.6	98.0	101.2	97.2	99.0
1	99.3	101.9	104.0	103.6	103.8	105.4	102.9	102.6	103.3	105.7	105.3	105.9
2	104.6	107.5	107.6	110.8	107.5	111.1	110.5	108.5	108.5	110.2	113.3	112.9
3	109.8	112.6	111.3	115.4	111.4	116.1	117.5	114.0	113.8	114.7	117.9	118.5
4	115.3	115.8	114.9	118.2	116.9	119.6	121.9	118.1	117.9	119.1	121.3	122.5
5	119.7	118.7	118.3	120.6	119.6	122.3	126.4	121.1	120.9	122.1	123.7	125.8
6	122.9	120.7	120.3	122.6	121.9	124.7	130.2	123.4	123.6	124.6	125.8	128.8
7	126.0	122.2	122.5	124.1	123.6	126.6	133.0	125.3	125.7	127.0	127.9	131.1
8	128.5	123.6	123.5	125.4	125.3	128.2	135.5	127.2	127.5	128.8	129.6	133.0
9	130.9	124.8	125.3	126.7	126.7	129.5	138.2	128.6	129.0	130.4	131.3	134.8
10	133.1	125.9	126.4	127.6	128.0	130.7	140.4	130.1	130.4	132.0	132.9	136.4
11	135.1	126.9	127.8	128.5	128.9	132.2	142.8	131.4	131.8	133.2	133.9	137.9
12	137.0	128.0	128.7	129.6	130.1	133.2	145.0	132.5	132.9	134.5	134.9	139.1
13	138.5	129.1	130.1	130.4	131.2	134.3	147.3	133.7	133.9	135.8	136.6	140.2
14	140.3	129.9	131.1	131.1	131.8	135.6	149.6	134.9	135.2	136.7	138.1	141.6
15	142.2	130.9	132.0	132.4	132.8	136.9	151.6	135.9	136.6	137.6	139.5	142.8
16	143.2	131.7	132.9	133.6	133.9	138.0	153.7	137.0	138.0	139.0	140.7	143.8
17	144.9	132.7	133.8	134.6	134.9	139.0	155.6	138.1	139.1	140.2	142.1	145.0
18	146.7	133.4	134.6	135.5	136.0	140.2	157.8	139.2	140.2	141.4	142.9	146.2
19	149.0	134.4	135.2	136.4	137.0	141.4	159.8	140.2	141.3	142.4	144.1	147.2
20	150.7	135.4	136.4	137.4	138.3	142.4	161.8	141.3	142.4	143.4	145.2	148.2
21	152.1	136.4	137.3	138.5	139.3	143.4	164.0	142.4	143.4	144.3	146.1	149.3
22	153.9	137.4	138.1	139.5	140.2	144.4	166.5	143.2	144.3	145.3	147.2	150.3
23	155.9	138.4	139.1	140.5	141.4	145.4	168.8	144.1	145.3	146.2	148.3	151.2
24	157.7	139.0	140.0	141.6	142.3	146.4	171.1	145.3	146.3	147.1	149.1	152.1
25	159.5	140.1	140.9	142.3	143.2	147.4	173.3	146.0	147.3	148.1	150.0	153.0
26	161.7	141.2	141.9	143.0	144.1	148.4	175.6	146.8	148.3	148.9	151.0	153.8
27	163.7	141.9	142.8	144.0	145.0	149.4	178.0	147.9	149.3	149.8	151.7	154.7
28	165.7	142.8	143.6	144.8	146.1	150.4	180.5	148.7	150.1	150.7	152.5	155.6
29	167.6	143.7	144.6	145.8	147.0	151.3	183.0	149.6	151.0	151.5	153.2	156.2
30	169.7	144.5	145.4	146.8	147.8	152.1	185.3	150.5	151.8	152.3	153.9	157.0
31	171.7	145.1	146.4	147.5	148.4	152.9	187.3	151.2	152.6	153.1	154.7	157.7
32	173.8	145.7	147.2	148.5	149.2	153.9	189.5	151.9	153.2	153.8	155.7	158.3
33	176.3	146.6	148.0	149.5	150.5	154.8	192.0	152.8	154.0	154.6	156.0	158.9
34	178.5	147.5	148.7	150.2	151.3	155.6	194.4	153.5	154.7	155.3	157.0	159.6
35	180.9	148.6	149.7	151.0	152.0	156.3	196.7	154.4	155.4	156.0	157.7	160.2
36	183.3	149.3	150.6	151.9	152.8	157.0	199.1	155.4	156.1	156.6	158.2	160.8
37	185.7	150.0	151.6	152.6	153.4	157.8	201.4	156.1	156.8	157.5	158.8	161.3
38	187.9	150.7	152.1	153.3	154.3	158.5	203.6	156.7	157.4	157.9	159.3	161.7
39	190.4	151.3	152.9	154.1	155.2	159.2	205.6	157.5	157.9	158.7	160.0	162.3
40	193.0	152.0	153.6	154.8	155.9	159.8	207.7	158.8	158.5	158.9	160.6	162.8
41	195.3	153.1	154.3	155.5	156.7	160.4	209.9	159.5	159.4	159.5	161.1	163.1
42	197.3	154.0	155.2	156.3	157.3	161.0	211.9	161.3	160.2	160.5	161.5	163.5
43	200.0	154.6	155.8	157.1	157.9	161.5	213.9	166.8	160.6	161.0	162.1	163.8
44	202.6	155.6	156.4	157.5	158.6	162.0	215.7	171.8	161.0	161.4	162.5	164.2
45	204.8	157.7	157.2	158.1	159.1	162.5	217.5	177.9	162.0	161.7	162.9	164.5
46	207.1	160.4	157.7	158.4	159.6	163.0	219.1	185.6	163.5	162.2	163.2	164.9
47	209.7	163.0	158.2	159.5	160.2	163.5	220.7	193.6	165.1	162.8	163.7	165.3
48	212.3	167.2	158.4	160.3	160.8	163.9	222.3	200.6	168.0	163.4	163.9	165.7
49	215.0	174.4	159.7	161.1	161.3	164.4	224.0	206.2	174.2	164.3	164.6	165.9
50	217.1	183.4	160.4	161.7	161.8	164.7	225.4	210.5	184.0	165.7	164.7	166.2
51	218.9	192.0	161.1	161.8	162.5	165.1	226.6	214.3	195.1	167.1	165.4	166.5
52	221.1	198.5	163.9	162.3	162.9	165.5	227.5	217.3	204.5	171.0	165.4	166.7
53	223.3	204.8	171.9	162.9	163.4	165.8	228.6	220.2	211.4	175.9	166.1	167.0
54	225.1	210.1	181.6	163.9	163.8	166.2	229.7	222.7	216.6	185.5	166.5	167.1

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839062	839234	839235	839236	839237	839238	839064	839244	839245	839246	839247	839248
Date	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Distillation, D86 (^{o}F)												
55	227.3	214.4	193.5	164.1	164.2	166.6	230.9	224.5	220.5	197.7	166.5	167.5
56	229.9	218.4	202.6	164.8	164.4	166.9	232.3	226.4	223.4	208.2	167.4	167.7
57	231.9	221.2	210.4	173.3	165.2	167.2	233.6	228.3	225.7	216.3	169.6	167.9
58	233.9	224.0	215.5	189.6	165.7	167.5	234.8	229.8	227.7	221.8	171.7	168.1
59	236.4	226.5	219.5	204.2	166.1	167.7	236.0	230.9	229.3	224.4	174.8	168.4
60	238.6	229.3	223.9	214.7	166.3	168.0	237.7	232.0	230.5	227.0	177.9	168.7
61	240.3	232.4	228.5	222.4	166.7	168.3	239.1	233.2	231.9	229.0	183.3	168.8
62	242.6	235.2	232.1	227.1	167.5	168.5	240.3	234.8	233.5	231.2	198.5	169.0
63	244.7	237.7	234.9	230.8	168.8	168.7	241.2	235.9	235.2	233.5	215.2	169.2
64	246.8	239.7	238.1	234.2	173.2	169.1	242.4	237.3	237.2	235.6	223.7	169.4
65	248.9	241.5	241.2	237.2	183.6	169.6	243.7	238.7	238.7	237.4	228.0	169.8
66	251.5	243.7	243.6	240.3	205.8	169.8	245.3	240.1	239.7	239.3	231.8	170.1
67	254.1	246.1	245.7	243.5	222.7	169.9	246.6	241.2	240.5	240.6	234.9	170.4
68	256.5	248.4	247.6	246.5	230.7	170.2	247.8	242.4	240.6	242.1	237.3	170.7
69	258.8	250.7	250.1	249.2	235.5	170.6	249.1	243.8	240.7	243.6	239.5	171.3
70	261.2	252.9	252.1	251.1	240.2	171.0	250.8	245.6	242.8	244.7	241.5	171.8
71	263.8	255.3	254.1	253.2	243.8	171.3	252.3	247.4	245.4	245.0	243.8	172.5
72	266.5	257.6	257.2	255.4	248.2	171.6	253.9	249.1	247.1	246.0	245.8	173.6
73	268.9	260.0	260.2	258.1	252.0	171.8	255.5	250.5	248.4	248.1	247.5	175.3
74	271.4	262.8	262.7	260.9	255.1	172.6	257.3	252.0	249.6	250.4	249.2	184.8
75	273.9	265.8	265.7	263.9	258.3	175.6	259.3	253.5	251.2	252.0	250.1	218.5
76	276.9	268.5	269.1	266.5	261.4	209.1	260.9	255.3	253.1	252.4	250.2	236.1
77	280.5	271.5	272.2	268.9	262.9	244.7	263.0	257.6	254.9	253.7	251.9	241.0
78	283.4	274.6	275.0	271.0	266.2	250.7	265.5	259.8	256.9	256.7	254.7	244.7
79	286.6	278.1	277.9	272.3	270.4	253.5	267.7	262.0	259.4	259.6	257.6	248.1
80	289.4	281.5	281.9	274.5	274.2	257.5	270.6	264.9	262.1	262.7	259.9	251.2
81	292.8	285.1	284.9	279.3	277.6	263.0	273.2	268.0	265.4	265.7	262.3	254.4
82	296.0	288.5	288.4	284.6	279.2	268.5	275.9	270.6	268.8	268.6	265.8	257.6
83	298.7	291.9	291.7	289.4	281.4	272.9	278.9	273.4	272.1	271.5	269.2	260.6
84	300.4	295.6	295.9	293.3	287.8	277.4	282.5	276.7	275.3	274.6	272.7	263.6
85	306.2	299.3	299.5	297.1	293.2	282.6	286.1	280.3	278.7	278.2	276.1	266.6
86	310.9	302.1	303.7	301.4	298.0	287.5	290.1	284.0	282.5	281.8	279.9	270.0
87	314.5	307.0	307.9	304.9	301.7	292.3	294.1	287.6	286.8	285.5	283.8	274.2
88	318.1	312.4	310.7	308.4	306.4	297.6	298.7	291.7	291.2	289.8	288.2	278.4
89	321.9	316.8	314.4	310.1	310.8	303.0	303.4	296.3	296.0	294.7	293.5	283.1
90	325.4	320.8	320.3	316.1	314.9	308.3	308.0	301.6	301.1	299.6	298.7	288.3
91	329.0	324.8	324.8	321.5	318.6	313.5	313.2	307.0	306.2	305.3	303.7	294.4
92	333.6	329.4	329.4	326.6	323.1	318.2	316.5	312.0	311.4	310.6	310.0	300.3
93	338.9	333.3	334.9	332.1	329.7	323.1	323.3	316.4	316.5	316.8	315.8	306.9
94	342.0	337.8	340.5	338.5	336.5	329.0	330.2	322.9	322.6	322.6	320.6	313.7
95	348.7	346.8	347.7	345.0	343.6	336.8	337.4	331.5	330.7	328.8	329.6	320.3
96	361.9	355.6	355.2	352.6	350.9	345.4	346.7	341.2	340.0	338.4	338.5	329.6
97	374.9	367.8	367.7	365.2	361.4	356.2	359.9	353.0	351.9	349.5	351.5	342.3
98	394.3	383.1	386.8	384.9		372.6		369.8	369.5	366.1	369.3	359.8
99												
FBP	406.1	393.8	394.9	393.1	402.9	384.2	390.5	385.6	386.2	391.3	385.1	377.2
Recovered (%)	97.3	97.7	96.6	98.0	97.6	98.0	97.4	97.8	97.3	97.1	98.2	98.1
Residue (%)	1.0	0.8	1.0	1.0	0.9	0.8	1.0	0.8	0.7	0.6	0.9	0.8
Loss (%)	1.7	1.5	2.4	1.0	1.5	1.2	1.6	1.4	2.0	2.3	0.9	1.1
$T_{V/L=20}$ (^{o}F)	152.0	133.4	133.0	133.3	133.0	134.3	155.5	136.5	137.0	137.1	136.7	137.8
RON	92.5	95.9	96.7	96.6	98.6	100.5	98.8	100.7	101.1	101.4	101.5	101.8
MON	82.9	84.6	85.1	85.1	85.7	88.1	87.5	88.8	88.6	89.0	88.8	89.4
(R+M)/2	87.7	90.3	90.9	90.9	92.1	94.3	93.2	94.8	94.9	95.2	95.2	95.6

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	PA	PA	PA	PA	PA	PA	TN	TN	TN	TN	TN	TN
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839063	839239	839240	839241	839242	839243	839059	839219	839220	839221	839222	839223
Date	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08
Dry Vapor Pressure Equivalent (psi)	6.89	8.60	8.55	8.44	8.35	8.30	7.02	8.20	8.10	8.08	7.99	7.73
Specific Gravity	0.7582	0.7517	0.7555	0.7434	0.7607	0.7572	0.7434	0.7468	0.7504	0.7486	0.7536	0.7503
Ethanol (Vol%)	0.00	10.18	12.66	15.26	20.43	30.96	0.00	10.49	12.98	15.33	20.33	31.44
Ethanol (Wt%)	0.00	10.75	13.30	16.30	21.33	32.46	0.00	11.15	13.73	16.26	21.42	33.27
Distillation, D86 (^{o}F)												
IBP	95.0	97.3	99.2	97.7	97.3	99.8	90.4	99.7	103.6	101.3	100.5	104.2
1	100.4	102.1	103.0	102.2	103.6	104.5	98.7	105.3	109.9	105.6	104.9	109.0
2	105.9	106.9	106.9	106.7	110.0	109.3	107.1	110.9	116.2	110.0	109.4	113.8
3	111.3	111.5	111.1	111.0	115.0	114.0	115.4	116.4	122.5	114.4	113.8	118.6
4	116.5	115.1	114.7	114.0	118.0	117.6	122.3	121.2	125.8	118.8	118.7	123.3
5	120.9	117.4	117.2	117.1	120.4	120.3	127.6	124.5	128.9	123.2	123.8	127.8
6	124.2	119.0	119.5	119.3	122.3	122.9	132.4	127.2	131.5	126.5	127.3	131.7
7	127.0	120.6	121.4	121.3	123.9	125.0	136.9	129.7	133.3	129.4	130.9	134.3
8	129.5	122.1	123.0	123.0	125.6	126.5	141.2	132.1	135.4	132.0	133.2	136.7
9	131.7	123.4	124.4	124.4	126.9	128.1	145.2	133.8	137.4	134.1	135.5	139.2
10	133.8	124.2	125.6	126.0	128.2	129.9	149.0	135.6	139.0	136.0	137.9	141.5
11	135.7	125.1	126.7	127.1	129.3	131.2	152.7	137.4	140.6	137.9	139.6	143.4
12	137.5	125.9	127.6	128.1	130.4	132.5	156.1	139.0	142.0	139.4	141.3	144.9
13	139.4	127.0	128.5	129.2	131.5	133.6	159.5	140.6	143.0	140.9	142.8	146.6
14	141.0	128.1	129.5	130.1	132.4	134.8	162.9	142.1	144.5	142.7	144.2	148.2
15	142.5	128.9	130.4	131.1	133.4	135.9	166.2	143.5	145.7	144.3	145.8	149.8
16	144.0	129.9	131.4	132.1	134.4	137.1	169.4	144.9	147.0	145.7	147.0	151.0
17	145.8	131.1	132.2	133.1	135.4	138.2	172.3	146.4	148.2	147.0	148.2	152.0
18	147.5	132.1	133.2	134.3	136.5	139.3	175.3	147.6	149.2	148.0	149.2	153.1
19	149.1	132.9	134.1	135.3	137.7	140.4	178.3	148.8	150.3	149.1	150.4	154.0
20	150.9	133.7	135.1	136.2	138.6	141.6	181.2	150.1	151.3	150.3	151.5	154.6
21	152.7	134.7	136.1	137.2	139.6	142.8	184.2	151.0	152.4	151.5	152.5	155.5
22	154.6	135.8	137.0	138.1	140.7	143.6	187.2	152.0	153.0	152.5	153.4	156.4
23	156.4	136.8	137.9	139.0	141.8	144.9	189.9	152.8	153.5	153.4	154.3	157.1
24	158.1	137.5	138.8	140.2	142.7	145.9	192.4	153.5	154.3	154.2	154.8	157.9
25	159.8	138.5	139.7	141.2	143.7	147.0	194.8	153.8	155.3	155.0	155.6	158.5
26	161.7	139.5	140.7	142.0	144.7	148.1	197.2	154.6	156.0	155.7	156.4	159.1
27	163.6	140.4	141.6	142.9	145.8	149.1	199.5	155.6	156.5	156.4	157.2	159.6
28	165.7	141.3	142.5	143.9	146.7	150.0	201.8	156.4	157.2	157.2	157.9	160.1
29	167.9	142.1	143.3	144.7	147.5	151.1	203.8	157.1	157.5	157.9	158.5	160.6
30	170.1	143.0	144.1	145.5	148.3	151.9	205.6	157.7	158.2	158.5	158.9	161.2
31	172.4	143.6	145.0	146.3	149.4	152.9	207.6	158.3	159.0	159.1	159.5	161.6
32	174.7	144.4	146.0	147.3	150.4	153.7	209.2	159.1	159.2	159.5	160.0	162.1
33	177.0	145.4	146.9	148.1	151.2	154.7	210.6	159.9	159.8	160.1	160.4	162.5
34	179.1	146.4	147.7	149.3	152.1	155.5	212.3	160.3	160.2	160.6	160.8	162.7
35	181.6	147.4	148.5	150.0	153.0	156.4	213.8	162.0	160.8	161.2	161.1	163.0
36	184.4	148.3	149.4	150.8	153.6	157.1	215.1	164.3	161.2	161.7	161.7	163.3
37	187.0	149.1	150.4	151.6	154.5	157.9	216.1	167.2	161.5	162.1	162.2	163.6
38	189.6	149.9	151.3	152.6	155.5	158.6	217.3	171.4	162.2	162.4	162.6	163.9
39	192.4	150.7	151.9	153.4	156.2	159.3	218.9	178.3	163.6	162.9	162.9	164.1
40	195.0	151.6	152.7	154.2	156.9	159.9	219.8	188.0	165.0	163.4	163.1	164.3
41	197.6	152.4	153.6	155.0	157.6	160.7	220.5	198.1	168.9	163.9	163.2	164.6
42	200.4	153.1	154.2	155.6	158.3	161.3	221.6	205.5	174.9	164.5	163.5	164.9
43	203.1	153.4	154.9	156.4	159.0	161.8	222.5	210.5	181.4	165.1	163.9	165.2
44	205.9	154.5	155.5	157.3	159.7	162.5	223.7	214.3	190.1	166.0	164.2	165.4
45	208.8	156.3	156.1	158.0	160.3	163.0	224.7	216.4	201.0	167.3	164.7	165.5
46	211.5	159.0	156.9	158.6	161.0	163.5	225.4	218.8	209.3	169.5	164.7	165.8
47	214.0	163.4	157.9	159.1	161.6	164.1	226.2	220.7	214.3	172.1	164.9	166.0
48	216.8	168.8	158.3	159.7	162.2	164.5	227.2	222.6	217.9	175.1	165.4	166.2
49	219.7	175.2	159.0	160.5	162.8	164.9	228.3	224.4	220.9	181.8	165.7	166.3
50	222.2	182.1	159.9	160.9	163.3	165.3	229.2	225.7	222.5	194.2	166.0	166.5
51	224.5	190.5	160.8	161.7	163.8	165.7	229.8	226.9	224.6	207.6	166.3	166.6
52	227.2	197.9	163.7	162.1	164.3	166.1	231.0	227.5	226.8	215.8	166.8	166.8
53	230.1	204.6	169.5	162.8	164.8	166.6	232.3	227.3	227.7	220.0	167.2	166.9
54	232.5	210.2	179.7	163.9	165.3	167.0	233.0	227.7	228.3	222.2	167.8	167.2

ASTM Class	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
State	PA	PA	PA	PA	PA	PA	TN	TN	TN	TN	TN	TN
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839063	839239	839240	839241	839242	839243	839059	839219	839220	839221	839222	839223
Date	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08
Distillation, D86 (^{o}F)												
55	234.7	214.7	192.2	164.4	165.7	167.3	233.7	229.2	229.1	223.9	168.9	167.4
56	237.2	218.9	203.5	166.8	166.1	167.6	234.6	230.4	230.1	225.3	171.1	167.5
57	239.9	222.6	212.5	172.9	166.4	167.9	235.5	231.3	231.0	226.7	176.1	167.5
58	242.5	226.3	219.3	184.3	166.7	168.1	236.4	232.4	232.4	228.1	188.6	167.6
59	244.9	229.8	224.8	200.6	167.3	168.5	237.4	233.9	233.2	229.6	206.8	167.8
60	247.0	233.1	229.1	212.9	167.7	168.8	237.9	234.1	234.2	230.8	219.1	167.9
61	249.1	236.2	232.6	221.8	168.4	169.0	238.7	234.6	235.7	231.8	224.7	168.0
62	251.5	239.2	236.2	227.4	169.2	169.5	239.6	236.1	236.9	232.9	227.4	168.3
63	254.2	242.0	239.6	232.1	170.7	169.7	240.5	237.1	237.7	233.8	229.5	168.5
64	256.6	244.9	242.7	236.2	180.8	170.1	241.5	237.7	238.5	235.3	231.5	168.7
65	259.1	247.5	245.4	240.3	203.9	170.3	242.5	239.1	239.6	237.8	233.2	168.7
66	261.9	249.6	248.2	243.6	223.7	170.6	243.8	240.1	240.4	239.2	234.1	168.9
67	264.4	251.9	250.9	246.5	233.4	171.0	245.0	240.4	240.9	239.3	234.6	169.2
68	266.9	254.9	253.7	250.5	239.7	171.2	246.1	241.1	241.3	239.5	236.0	169.4
69	269.4	257.7	256.2	253.7	245.2	171.5	247.8	242.3	242.2	240.6	237.7	170.0
70	271.6	260.2	258.8	256.5	249.5	172.0	249.4	243.3	244.1	241.7	239.4	170.4
71	274.0	262.6	261.7	259.2	252.9	172.5	250.2	243.8	245.8	242.8	241.3	171.3
72	276.9	265.4	264.0	261.9	256.2	173.3	251.1	245.5	247.6	244.1	242.8	180.2
73	279.8	268.2	265.9	264.7	259.6	173.8	253.0	246.7	249.6	245.7	243.7	206.8
74	282.8	270.9	268.8	267.3	262.9	177.1	255.1	248.4	251.2	247.3	245.0	231.5
75	284.9	274.2	272.5	269.6	266.4	205.3	257.1	250.8	252.7	249.2	247.0	235.3
76	284.8	277.5	275.6	272.4	269.8	249.9	259.2	253.2	254.2	251.6	249.4	238.2
77	288.1	280.4	278.4	275.7	273.3	257.9	261.4	255.6	256.0	253.6	251.9	241.1
78	294.6	283.4	281.3	279.1	276.8	263.1	263.6	257.7	258.2	255.7	254.3	244.5
79	299.0	286.4	284.6	283.2	280.1	267.9	266.1	259.8	260.9	258.2	256.5	248.0
80	302.5	290.1	288.1	287.0	283.1	271.7	268.9	262.6	263.9	260.7	258.6	251.1
81	305.8	293.1	291.5	290.3	285.7	275.7	272.2	265.5	266.8	262.9	260.8	253.9
82	308.7	295.9	294.4	293.2	287.7	279.3	275.9	268.7	269.9	265.6	263.1	256.8
83	311.6	300.3	298.0	296.7	291.2	283.7	279.7	272.5	273.2	269.0	266.1	259.6
84	314.6	303.0	302.5	301.0	296.6	287.7	283.8	276.5	277.1	272.6	269.6	262.4
85	317.3	305.3	306.6	304.9	301.7	291.3	288.4	281.1	281.4	277.3	274.1	265.4
86	319.6	312.1	310.0	308.3	306.0	295.6	293.6	285.9	286.5	282.4	279.5	269.4
87	322.8	316.4	311.8	311.1	309.3	299.5	299.4	290.5	292.1	287.5	284.7	274.8
88	326.9	320.4	316.0	315.5	312.2	304.7	305.0	295.9	297.2	292.9	290.6	278.8
89	331.8	324.5	322.2	321.1	316.6	310.0	310.7	301.4	303.5	298.5	296.5	283.6
90	336.5	328.0	327.1	325.8	322.2	313.5	316.4	307.1	309.7	304.8	304.0	292.7
91	340.8	331.9	332.0	330.4	327.7	318.7	322.3	313.7	316.0	312.8	311.0	300.7
92	345.3	337.5	336.4	335.7	333.1	324.9	326.0	320.7	321.7	320.1	318.7	308.9
93	350.1	343.9	340.1	340.4	338.5	329.6	332.1	327.1	328.6	326.7	326.6	317.2
94	355.4	349.8	346.0	343.8	343.6	337.3	340.9	331.5	334.9	333.9	333.8	324.8
95	361.9	354.9	355.0	353.9	351.1	344.7	348.6	338.4	340.3	342.2	340.6	333.2
96	371.9	363.8	364.9	361.9	361.2	354.0	357.9	347.3	349.1	351.2	348.5	343.5
97	386.0	377.5	376.8	372.3	372.7	364.8	371.7	359.3	362.4	363.7	362.9	355.9
98	400.6	393.2	392.5	387.2	387.6	381.0	391.2	375.2	384.5		383.0	376.2
99												
FBP	408.1	405.0	406.8	407.5	402.3	400.2	402.2	401.3	402.5	399.2	400.1	401.3
Recovered (%)	96.8	97.8	98.0	97.9	98.3	97.9	97.7	98.0	97.5	96.8	96.9	97.1
Residue (%)	1.0	0.8	0.8	0.6	0.5	0.6	1.0	0.5	0.9	1.0	1.0	0.9
Loss (%)	2.2	1.4	1.2	1.5	1.2	1.5	1.3	1.5	1.6	2.2	2.1	2.0
$T_{V/L=20}$ (^{o}F)	154.0	132.2	131.6	131.8	132.4	133.6	164.8	140.2	139.7	139.8	139.9	141.2
RON												
MON												
(R+M)/2												

ASTM Class	AA	AA	AA	AA	AA	AA	A	A	A	A	A	A
State	TN	TN	TN	TN	TN	TN	SD	SD	SD	SD	SD	SD
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839058	839214	839215	839216	839217	839218	839066	839256	839257	839258	839259	839260
Date	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08
Dry Vapor Pressure Equivalent (psi)	7.22	8.51	8.51	8.40	8.33	8.11	8.13	9.08	9.23	9.22	9.13	8.89
Specific Gravity	0.7509	0.7549	0.7544	0.7546	0.7565	0.7613	0.7441	0.7469	0.7485	0.7495	0.7537	0.7629
Ethanol (Vol%)	0.00	10.27	12.76	15.47	20.45	31.29	0.00	10.21	12.65	15.18	20.75	31.51
Ethanol (Wt%)	0.00	10.80	13.43	16.28	21.46	32.63	0.00	10.85	13.42	16.08	21.86	32.79
Distillation, D86 (^{o}F)												
IBP	93.0	99.1	100.3	99.9	99.3	102.0	87.7	94.6	95.4	95.1	95.6	97.2
1	99.1	104.0	104.1	104.9	104.6	106.1	93.0	99.8	100.7	100.8	101.0	103.5
2	105.2	108.9	107.8	109.8	109.9	110.1	98.3	104.9	106.0	106.5	106.3	109.7
3	111.2	113.8	111.6	114.8	115.0	114.5	103.6	110.0	111.3	112.1	111.5	115.8
4	117.4	117.8	115.4	118.5	118.7	119.6	109.5	114.5	115.4	116.8	115.4	120.3
5	121.4	120.1	118.6	121.2	121.5	122.8	115.3	117.7	118.5	119.4	118.5	122.9
6	124.6	122.2	121.1	123.1	123.8	125.1	120.1	120.3	121.2	122.0	122.1	125.8
7	127.3	123.7	123.2	125.1	125.7	127.2	124.3	122.7	123.5	124.2	124.3	128.1
8	129.5	125.0	125.0	126.9	127.3	129.2	128.4	124.7	125.5	126.2	126.9	130.4
9	131.7	126.4	126.4	128.0	128.7	130.9	131.9	126.6	127.4	128.3	129.4	132.4
10	133.6	127.6	127.8	129.5	129.9	132.3	135.1	128.4	129.3	130.4	131.6	134.4
11	135.8	128.7	129.0	130.7	131.0	133.4	138.0	130.3	131.1	132.3	133.6	136.5
12	137.4	129.8	130.3	131.5	132.1	134.7	141.0	132.1	132.6	133.9	135.5	137.9
13	139.3	130.7	131.2	132.5	132.8	135.7	144.0	133.6	134.2	135.5	136.9	139.3
14	141.0	131.7	132.2	133.3	133.8	136.6	147.0	135.1	135.6	136.9	138.7	141.0
15	142.7	132.6	133.2	134.2	135.0	137.5	150.0	136.6	137.0	138.2	140.2	142.8
16	144.2	133.4	134.1	135.2	135.6	138.7	152.9	137.8	138.4	139.6	141.6	144.1
17	146.0	134.3	135.0	136.0	136.6	139.8	155.5	139.1	139.7	140.8	142.8	145.4
18	147.4	135.2	135.7	136.8	137.5	140.8	158.4	140.3	141.2	142.2	144.2	146.8
19	149.1	136.0	136.6	137.6	138.5	141.8	161.4	141.6	142.4	143.4	145.6	147.9
20	151.0	137.0	137.4	138.5	139.2	142.8	164.1	142.7	143.5	144.5	146.8	149.1
21	152.5	137.9	138.3	139.4	140.2	143.8	166.7	143.9	144.7	145.8	147.8	150.1
22	154.3	138.9	139.3	140.5	141.5	144.8	169.4	145.0	145.7	146.9	148.9	151.0
23	155.8	139.7	140.2	141.4	142.3	145.9	172.3	146.1	146.7	147.9	149.9	151.8
24	157.4	140.4	141.1	142.1	143.1	146.7	175.1	147.0	147.6	148.9	151.0	152.9
25	159.2	141.2	141.8	143.0	143.9	147.6	177.7	148.0	148.7	149.8	152.0	153.6
26	161.0	142.1	142.6	143.8	144.6	148.5	180.2	149.0	149.7	150.5	152.8	154.3
27	162.7	142.9	143.4	144.5	145.4	149.5	182.6	149.8	150.7	151.3	153.6	155.0
28	164.7	143.7	144.0	145.4	146.2	150.3	185.0	150.9	151.4	152.1	154.4	155.7
29	166.4	144.5	144.8	146.3	147.1	151.2	187.4	151.7	152.0	153.0	155.1	156.4
30	168.2	145.1	145.8	147.1	148.2	152.2	189.6	152.3	152.6	153.7	155.7	157.0
31	170.2	145.7	146.7	147.9	149.1	152.9	191.7	152.9	153.2	154.2	156.4	157.6
32	172.5	146.5	147.3	148.6	149.8	153.7	193.8	153.4	154.0	155.0	157.1	158.2
33	174.4	147.4	147.9	149.4	150.5	154.5	195.6	154.1	154.5	155.7	157.6	158.8
34	176.7	148.2	148.9	149.9	151.2	155.2	197.4	154.8	154.9	156.2	158.0	159.2
35	178.9	148.9	149.6	150.5	152.2	156.0	199.2	155.7	155.6	156.7	158.5	159.6
36	181.3	149.4	150.4	151.6	153.0	156.7	200.9	156.2	156.3	157.1	159.2	160.1
37	183.3	149.9	151.2	152.3	153.4	157.5	202.5	156.7	156.6	157.6	159.5	160.4
38	185.7	150.6	152.0	153.0	154.2	158.1	204.2	157.5	157.3	158.1	160.0	160.7
39	187.6	151.2	152.6	153.6	154.9	158.7	205.6	157.8	157.8	158.8	160.5	161.1
40	190.3	151.8	153.4	154.4	155.6	159.5	206.9	158.4	158.1	159.0	160.9	161.6
41	192.4	152.7	154.0	155.1	156.3	160.0	208.3	161.4	158.5	159.2	161.4	161.9
42	194.8	153.2	154.3	155.7	157.1	160.5	209.8	165.6	158.9	159.9	161.7	162.2
43	197.0	153.6	155.0	156.3	157.7	161.1	211.2	170.6	159.6	160.3	162.1	162.4
44	199.3	155.0	155.6	157.0	158.2	161.6	212.7	177.7	160.0	160.8	162.5	162.8
45	202.1	157.6	156.3	157.6	158.7	162.2	214.0	185.2	160.6	160.9	162.4	163.0
46	204.3	160.1	156.8	158.3	159.4	162.8	215.3	191.8	161.3	161.1	162.8	163.3
47	207.1	163.6	157.5	158.6	159.9	163.0	216.7	197.3	163.6	161.3	163.0	163.5
48	209.8	168.8	157.7	159.2	160.5	163.6	218.1	202.2	167.8	162.4	163.4	163.9
49	211.6	175.4	158.8	159.9	161.0	164.1	219.2	206.3	174.7	163.1	163.8	164.1
50	213.8	184.1	159.9	160.6	161.5	164.2	220.2	209.9	184.7	164.1	164.2	164.3
51	216.4	192.2	160.5	160.9	161.8	164.7	221.4	212.7	194.5	166.5	164.7	164.5
52	218.6	199.2	164.8	161.3	162.3	165.3	222.6	215.3	201.7	169.7	165.1	164.8
53	221.5	204.9	172.0	162.2	162.8	165.8	223.9	217.3	206.9	176.0	165.4	165.0
54	223.7	209.5	180.9	163.5	163.2	166.3	225.2	219.3	210.4	186.8	165.7	165.2

ASTM Class	AA	AA	AA	AA	AA	AA	A	A	A	A	A	A
State	TN	TN	TN	TN	TN	TN	SD	SD	SD	SD	SD	SD
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839058	839214	839215	839216	839217	839218	839066	839256	839257	839258	839259	839260
Date	9/25/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08
Distillation, D86 (^{o}F)												
55	225.7	213.7	191.9	164.6	163.7	166.8	226.3	220.4	213.8	198.3	166.2	165.5
56	228.2	217.3	200.4	165.0	164.2	167.2	227.3	221.3	217.0	206.1	166.8	165.7
57	231.1	220.5	207.0	170.9	164.5	167.4	228.6	222.5	219.1	211.8	167.3	165.8
58	233.3	223.4	213.1	182.3	165.0	167.5	229.8	224.2	220.7	215.5	167.5	166.1
59	235.5	225.8	217.8	197.8	165.3	167.8	230.7	225.7	222.0	218.4	168.6	166.4
60	237.8	228.5	222.4	209.8	165.5	167.9	231.9	226.9	223.6	221.1	169.9	166.4
61	239.9	231.7	226.9	217.2	166.2	168.0	233.4	228.0	224.8	223.6	173.4	166.8
62	242.2	234.8	230.6	223.8	166.6	168.3	234.7	229.1	226.0	225.6	179.9	166.8
63	244.6	237.3	233.7	228.2	167.0	168.6	236.1	230.2	226.9	227.5	197.3	167.2
64	246.3	239.6	236.5	231.7	169.8	168.7	237.7	230.7	228.1	229.2	212.0	167.4
65	249.0	241.8	239.1	234.9	181.2	169.1	239.0	232.7	230.2	231.3	219.7	167.6
66	251.7	244.0	241.8	238.5	209.2	169.5	240.3	235.1	232.3	232.5	222.7	167.6
67	254.4	245.8	244.3	241.3	224.5	169.9	241.7	236.4	233.9	232.5	226.7	167.9
68	256.8	248.3	246.2	244.6	230.7	170.0	243.4	238.1	235.3	233.3	231.0	168.2
69	259.2	250.9	248.7	247.6	235.9	170.2	245.0	239.8	236.7	235.8	233.9	168.5
70	261.7	253.3	251.6	250.4	240.7	170.6	246.6	241.4	238.7	238.1	236.6	168.7
71	263.9	255.6	253.9	253.0	244.6	171.0	248.4	243.5	241.1	239.7	238.7	169.1
72	266.2	258.5	256.1	255.6	247.8	171.8	250.4	245.0	243.4	241.1	240.9	169.4
73	268.8	261.5	258.9	258.0	251.2	171.8	252.6	246.7	245.3	242.9	242.7	169.5
74	271.8	263.9	262.1	259.6	255.0	171.6	254.9	249.5	247.6	243.8	245.0	170.6
75	274.4	266.8	265.3	262.6	258.3	175.3	257.1	252.2	249.4	244.6	245.7	171.8
76	277.7	269.6	268.8	266.1	261.2	202.8	259.4	254.0	251.0	248.4	248.1	185.5
77	280.5	271.8	272.0	269.0	264.3	242.9	262.0	255.7	253.2	252.1	249.9	226.8
78	283.5	275.0	274.8	271.3	267.6	250.4	264.8	258.4	255.6	255.5	249.7	236.0
79	286.4	278.6	277.8	274.3	271.1	255.9	267.8	261.4	258.4	258.4	250.2	239.6
80	290.1	281.8	281.0	278.1	274.0	261.1	271.0	264.4	261.6	261.0	253.8	244.5
81	293.3	285.3	284.2	282.8	277.1	266.0	274.4	267.6	265.2	264.0	258.4	249.0
82	296.6	289.2	288.4	286.9	280.5	270.6	278.1	271.1	268.5	267.3	263.2	252.9
83	299.8	292.9	292.6	290.5	284.9	274.8	282.1	274.4	272.1	271.0	267.8	257.5
84	303.9	296.3	296.6	293.9	289.1	279.4	286.4	278.2	276.3	274.7	272.0	261.2
85	307.0	299.6	299.8	298.2	292.1	284.4	290.8	282.7	280.9	279.1	275.3	265.1
86	306.6	300.7	303.4	301.9	295.1	288.7	295.7	288.3	285.7	284.7	277.8	270.2
87	314.4	306.7	307.4	305.7	300.8	292.2	301.1	293.7	290.2	290.2	284.1	275.3
88	318.6	312.6	311.3	308.8	305.6	296.1	306.8	298.1	295.8	295.8	291.7	279.9
89	322.4	317.2	315.5	310.5	307.6	301.3	312.3	303.6	302.0	300.4	299.4	285.9
90	326.4	321.1	317.0	317.2	313.2	307.2	316.7	309.6	309.1	306.2	305.7	292.5
91	330.2	325.3	322.4	322.8	319.7	313.3	321.7	315.8	315.1	312.4	311.4	299.5
92	334.7	329.5	328.5	328.3	325.4	319.0	327.5	317.2	320.3	317.6	316.5	305.9
93	339.0	332.1	333.8	332.8	330.4	324.1	333.5	326.8	325.9	322.6	323.4	313.4
94	343.4	338.7	339.2	337.9	334.2	328.5	339.9	334.3	332.8	331.0	331.1	321.1
95	350.4	346.4	345.3	341.2	337.8	336.8	348.4	343.1	341.7	340.6	340.3	330.3
96	357.5	354.0	352.6	349.9	347.4	344.6	359.5	353.0	352.0	351.2	350.6	338.7
97	368.3	363.3	362.0	360.8	358.5	352.9	373.8	366.1	361.0	364.8	363.7	352.1
98	385.9	378.5	377.2	377.2	372.8	366.7	395.9	387.3	383.1	383.7		367.2
99				388.3								
FBP	396.3	398.1	390.3	391.9	388.4	380.7	414.6	403.0	399.9	404.1	398.8	385.4
Recovered (%)	97.3	97.5	96.7	97.7	97.8	97.8	97.1	97.3	97.3	97.6	97.5	97.7
Residue (%)	1.0	0.7	0.8	0.7	0.7	0.7	0.8	1.0	0.9	0.9	1.0	0.8
Loss (%)	1.7	1.8	2.5	1.6	1.5	1.5	2.1	1.7	1.8	1.5	1.5	1.5
$T_{V/L=20}$ (^{o}F)	152.9	134.4	134.6	133.3	134.0	135.0	151.3	133.1	132.7	133.2	133.1	134.8
RON	92.0	95.6	96.4	97.2	98.4	100.0	94.4	98.4	99.0	99.6	101.0	101.8
MON	82.8	84.2	84.7	85.4	87.1	87.7	86.7	89.1	89.5	89.4	90.2	90.4
(R+M)/2	87.4	89.9	90.6	91.3	92.8	93.9	90.6	93.8	94.3	94.5	95.6	96.1

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839065	839251	839252	839253	839254	839255	839068	839344	839345	839346	839347	839348
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Dry Vapor Pressure Equivalent (psi)	7.83	9.31	9.23	9.17	9.08	8.85	8.17	9.29	9.24	9.14	9.09	8.84
Specific Gravity	0.7432	0.7459	0.7472	0.7469	0.7496	0.7558	0.7501	0.7483	0.7510	0.7517	0.7544	0.7593
Ethanol (Vol%)	0.00	9.75	12.73	15.28	19.83	30.14	0.00	9.74	12.51	15.34	20.51	30.24
Ethanol (Wt%)	0.00	10.38	13.53	16.24	21.00	31.66	0.00	10.33	13.22	16.21	21.58	31.62
Distillation, D86 (^{o}F)												
IBP	93.7	91.6	95.5	97.0	94.4	99.7	89.8	91.9	95.6	95.4	96.1	97.5
1	98.5	95.9	99.5	101.0	99.9	105.1	100.2	98.3	99.6	101.0	102.9	106.3
2	103.2	100.2	103.4	105.0	105.4	110.6	110.6	104.8	103.5	106.5	109.6	115.1
3	107.9	104.4	107.7	108.9	110.4	115.0	119.1	110.6	107.4	111.9	116.3	120.3
4	112.7	109.6	112.6	112.8	114.4	118.2	124.3	114.8	111.3	115.7	119.6	123.8
5	117.8	112.9	115.1	116.0	117.2	120.7	128.6	117.8	115.1	118.7	122.3	126.6
6	121.4	114.7	117.2	118.5	119.3	122.7	132.1	120.3	118.2	121.1	124.7	129.5
7	124.5	116.6	119.3	120.5	121.4	124.7	135.6	122.6	121.0	123.7	127.2	132.0
8	127.0	118.5	121.0	121.9	123.4	126.4	138.7	124.7	123.7	125.7	129.1	133.8
9	129.5	120.1	122.3	123.4	124.9	128.2	141.7	126.6	125.9	127.9	131.4	135.9
10	131.9	121.6	123.8	124.8	126.3	129.7	144.7	128.4	128.1	129.5	133.1	137.7
11	133.8	122.9	125.0	126.2	127.7	131.3	147.6	130.3	130.2	131.5	135.2	139.4
12	135.9	124.3	126.1	127.2	128.9	132.5	150.4	131.9	132.0	133.1	136.8	141.1
13	137.8	125.4	127.0	128.5	130.1	133.7	153.3	133.3	133.5	134.5	138.4	142.6
14	139.5	126.3	128.0	129.8	131.3	134.8	156.0	134.9	135.2	136.2	139.9	144.0
15	141.3	127.3	129.1	130.8	132.4	135.9	158.6	136.5	136.9	137.8	141.3	145.6
16	142.7	128.2	130.3	131.9	133.5	137.2	161.3	137.9	138.4	139.4	142.6	146.9
17	144.6	129.5	131.6	133.0	134.6	138.5	164.1	139.5	139.9	140.7	144.0	148.0
18	146.4	130.7	132.6	134.0	135.6	139.7	166.8	140.8	141.2	142.1	145.3	149.2
19	148.2	132.2	133.6	135.1	136.6	140.9	169.3	142.0	142.6	143.5	146.4	150.4
20	150.2	133.4	134.4	135.9	137.5	142.0	171.8	143.2	143.8	144.7	147.5	151.4
21	151.9	134.5	135.4	137.0	138.6	143.1	174.2	144.3	144.9	145.8	148.5	152.3
22	153.2	134.9	136.4	138.0	139.8	143.9	176.6	145.5	145.9	147.0	149.5	153.1
23	155.4	136.0	137.4	138.9	140.8	145.1	179.1	146.4	147.1	148.0	150.6	153.9
24	157.0	136.9	138.1	139.7	141.8	146.3	181.7	147.3	148.3	148.9	151.3	154.7
25	158.8	138.3	139.2	140.7	142.9	147.2	184.0	148.3	149.1	149.5	152.1	155.5
26	160.8	139.3	140.2	141.6	143.6	148.1	186.2	149.0	149.9	150.9	153.0	156.3
27	162.6	140.3	141.1	142.5	144.5	148.9	188.2	150.0	150.9	151.6	153.8	157.0
28	164.7	141.2	142.1	143.3	145.4	149.9	190.3	151.0	151.8	152.6	154.5	157.7
29	166.4	142.0	142.9	144.1	146.2	150.8	192.5	151.8	152.5	153.1	155.0	158.4
30	168.4	142.7	143.7	145.2	147.2	151.6	194.4	152.7	153.2	153.8	155.6	158.8
31	170.4	143.7	144.6	146.2	148.2	152.2	196.2	153.3	153.8	154.7	156.4	159.2
32	172.2	144.2	145.3	146.9	149.0	152.9	198.1	154.0	154.4	155.4	157.0	159.8
33	174.2	145.2	146.1	147.6	149.8	153.8	200.0	154.7	155.4	155.8	157.7	160.2
34	176.0	145.9	147.0	148.5	150.5	154.6	201.7	155.4	156.2	156.2	157.9	160.6
35	178.1	146.9	147.7	149.2	151.3	155.5	203.4	155.9	156.6	157.1	158.7	161.1
36	180.2	147.9	148.3	150.0	152.0	156.2	205.1	156.5	157.4	157.7	159.1	161.5
37	182.0	148.4	149.2	150.6	152.7	156.8	206.8	157.3	157.9	157.8	159.7	161.9
38	184.4	149.1	150.2	151.7	153.4	157.6	208.3	158.3	158.2	158.8	160.3	162.1
39	186.5	149.7	150.9	152.3	154.2	158.1	209.8	158.8	158.6	158.7	160.7	162.5
40	188.5	150.4	151.5	152.9	154.8	158.6	211.1	160.2	159.0	159.4	161.0	162.9
41	190.7	151.1	152.2	153.5	155.4	159.2	212.5	163.3	159.6	159.7	161.5	163.0
42	192.7	151.5	152.7	154.2	156.0	159.9	214.0	167.3	160.3	160.3	162.1	163.3
43	195.0	152.3	153.1	154.7	156.7	160.5	215.3	172.5	160.7	161.0	162.3	163.5
44	197.2	153.0	154.0	155.5	157.4	161.0	216.6	179.9	161.6	160.9	162.7	163.9
45	199.4	153.3	154.8	156.1	157.9	161.5	217.8	187.8	162.4	161.6	163.0	164.3
46	201.6	154.5	155.3	156.7	158.5	161.9	219.0	194.6	164.1	161.8	163.2	164.6
47	203.5	155.7	156.1	157.3	159.1	162.3	220.2	200.2	167.6	162.0	163.5	164.8
48	205.6	158.9	156.6	157.7	159.5	162.8	221.6	205.5	171.9	162.5	163.6	165.0
49	207.9	161.4	157.0	158.6	159.8	163.3	222.8	208.4	178.6	163.3	163.7	165.2
50	209.9	167.8	158.4	158.9	160.6	163.6	223.9	211.0	187.6	164.3	164.0	165.6
51	212.5	175.7	160.5	159.3	161.2	164.0	225.1	213.4	196.4	167.5	164.1	165.8
52	214.6	183.8	162.7	159.9	161.5	164.4	226.3	215.2	203.2	170.5	164.5	166.1
53	216.6	191.8	165.2	160.4	161.8	165.0	227.5	217.3	207.8	176.3	165.0	166.2
54	219.1	197.9	168.3	161.0	162.4	165.5	229.0	219.8	211.6	186.5	165.4	166.5

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839065	839251	839252	839253	839254	839255	839068	839344	839345	839346	839347	839348
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Distillation, D86 (^{o}F)												
55	221.9	203.2	172.8	160.8	162.8	165.9	230.3	221.3	214.8	198.1	165.5	166.7
56	223.8	207.4	180.2	161.9	163.2	166.3	231.5	222.7	217.6	207.4	166.1	167.0
57	225.7	211.5	189.8	161.8	163.8	166.7	232.9	224.4	220.5	213.3	166.8	167.3
58	227.8	214.8	198.8	163.9	164.2	167.0	234.2	225.6	222.7	216.4	167.2	167.4
59	230.4	217.7	205.8	173.0	164.6	167.4	235.4	226.8	225.2	219.8	168.1	167.8
60	232.7	220.2	211.7	185.3	165.1	167.8	236.8	227.4	227.5	222.8	169.6	167.9
61	234.7	222.6	215.9	199.8	165.3	168.1	238.1	227.9	229.0	225.4	174.2	168.0
62	236.6	225.4	219.9	210.3	165.8	168.3	239.3	229.5	230.5	227.4	186.7	168.1
63	239.4	228.2	223.7	217.0	166.1	168.6	240.7	230.2	231.5	229.4	206.9	168.2
64	242.3	230.8	227.0	222.0	166.8	168.7	242.2	232.7	232.7	232.0	218.5	168.5
65	244.7	233.2	230.4	225.9	168.4	169.0	243.5	235.3	234.5	233.8	223.7	169.0
66	247.0	235.7	233.7	230.2	170.3	169.2	245.1	237.0	235.5	234.4	226.9	168.9
67	249.7	237.9	237.0	234.7	181.6	169.4	246.9	238.7	235.6	235.3	230.3	169.2
68	252.6	240.4	239.7	237.9	205.7	169.7	248.7	240.5	237.3	235.3	233.6	169.6
69	254.9	243.0	241.9	240.8	222.8	169.9	250.6	242.2	240.4	236.5	236.1	169.9
70	257.6	246.6	243.5	243.7	229.7	170.2	252.6	243.9	242.7	239.9	235.6	170.1
71	260.2	249.2	245.2	247.3	235.5	170.7	254.7	246.0	244.5	243.1	236.2	170.7
72	263.2	245.7	249.0	249.7	240.8	171.1	256.8	248.1	245.8	243.6	239.9	171.7
73	266.5	249.4	252.4	252.5	244.6	171.5	259.2	250.2	246.5	245.1	243.9	172.7
74	269.7	255.3	254.7	256.1	248.1	172.1	261.7	252.6	247.5	248.3	246.6	173.7
75	272.5	260.8	256.9	257.8	252.2	172.8	264.2	254.8	250.3	250.6	249.2	198.7
76	275.3	265.7	260.9	262.0	256.4	173.6	266.8	256.5	254.5	251.6	251.4	227.3
77	278.7	270.1	264.8	266.2	260.3	177.6	269.8	258.6	258.4	254.2	254.1	238.3
78	282.6	273.9	268.5	268.8	264.2	222.1	272.8	261.9	261.7	257.4	257.0	243.6
79	286.1	277.4	271.8	272.3	267.6	247.6	275.7	265.4	264.8	260.3	259.5	247.5
80	289.7	281.0	275.2	275.6	269.9	255.7	278.9	268.5	267.9	263.8	262.0	252.0
81	293.2	284.3	279.0	279.5	272.1	262.0	282.2	271.8	270.9	267.7	265.2	255.9
82	296.5	288.0	282.9	284.1	276.2	267.9	286.0	275.5	273.9	271.6	268.7	259.7
83	300.8	291.8	286.9	289.6	280.5	273.4	289.8	279.5	277.6	275.4	273.1	263.7
84	304.5	295.5	292.2	294.2	285.8	278.3	293.8	283.6	281.9	278.7	277.9	267.2
85	308.4	299.9	297.9	298.6	291.7	282.5	298.3	287.8	286.8	282.7	282.4	271.8
86	312.7	303.4	302.2	302.1	297.1	287.3	302.8	292.1	291.7	287.7	287.1	276.0
87	317.0	308.8	304.3	305.9	302.2	292.8	307.8	296.7	296.4	293.2	292.1	281.3
88	321.1	314.2	308.8	311.3	307.1	297.8	312.7	301.9	301.4	298.7	297.8	286.7
89	325.4	319.7	316.2	315.8	310.4	302.2	316.5	307.5	307.0	304.1	303.3	293.0
90	331.4	325.9	322.0	317.6	315.4	308.8	320.7	312.5	312.8	309.4	308.8	299.6
91	337.3	331.1	327.8	326.7	323.3	315.4	325.8	316.3	317.8	313.8	314.7	306.8
92	343.0	336.7	333.2	334.0	329.8	322.2	330.6	322.7	321.2	319.4	320.3	313.9
93	349.7	343.4	339.3	341.7	337.0	330.0	337.6	330.0	326.9	326.5	326.9	319.8
94	357.7	350.3	347.0	349.0	343.3	338.0	345.0	336.8	335.1	333.8	332.5	328.0
95	365.6	358.4	356.3	357.4	350.6	346.6	353.3	344.3	343.5	341.2	339.2	336.5
96	376.4	367.0	367.2	368.9	363.9	357.9	363.6	353.2	352.8	347.1	349.1	346.6
97	392.6	385.8	382.0	384.8	379.6	373.7	376.9	364.4	364.0	361.8	361.9	357.4
98		409.0	398.2		399.7	393.1	395.9	380.3	379.9	381.1	380.1	374.8
99												
FBP	438.3	423.1	416.6	422.2	417.2	407.5	413.6	398.2	398.5	406.6	399.1	391.0
Recovered (%)	96.7	97.4	97.7	96.8	97.9	97.9	97.8	97.9	96.6	97.8	97.5	98.1
Residue (%)	0.9	0.9	0.8	1.0	0.8	1.0	0.8	0.7	0.7	0.7	0.9	0.9
Loss (%)	2.4	1.7	1.5	2.2	1.3	1.1	1.4	1.4	2.7	1.5	1.6	1.0
$T_{V/L=20}$ (^{o}F)	147.3	129.0	130.1	129.3	129.9	131.8	150.3	132.6	132.5	133.1	133.2	134.5
RON												
MON												
(R+M)/2												

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	SD	SD	SD	SD	SD	SD	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839067	839339	839340	839341	839342	839343	839070	839354	839355	839356	839357	839358
Date	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Dry Vapor Pressure Equivalent (psi)	7.82	9.38	9.38	9.31	9.11	8.85	7.54	9.12	9.16	9.12	9.04	8.74
Specific Gravity	0.7439	0.7458	0.7494	0.7507	0.7533	0.7568	0.7579	0.7569	0.7582	0.7586	0.7601	0.7645
Ethanol (Vol%)	0.00	10.28	13.09	15.55	20.80	31.51	0.00	9.70	12.58	15.54	20.39	30.00
Ethanol (Wt%)	0.00	10.95	13.87	16.44	21.92	33.05	0.00	10.17	13.17	16.27	21.30	31.15
Distillation, D86 (^{o}F)												
IBP	91.5	93.6	93.7	94.9	95.7	95.4	95.9	98.6	96.0	95.7	95.0	98.9
1	97.1	97.7	97.8	99.9	102.2	101.2	100.5	102.0	101.1	101.8	103.7	104.1
2	102.7	101.8	101.9	104.8	108.6	106.9	105.1	105.4	106.1	107.9	110.7	109.4
3	108.3	105.8	106.0	109.5	112.5	112.0	109.8	108.7	110.6	112.1	114.1	114.0
4	113.7	109.7	110.2	113.2	115.5	115.6	114.7	112.1	113.8	114.9	116.8	117.4
5	117.9	112.8	112.7	115.5	117.9	118.4	119.3	114.8	116.1	117.2	119.0	120.1
6	121.4	115.2	115.0	117.5	119.9	120.9	122.7	117.2	118.1	119.1	121.1	122.4
7	124.3	117.4	117.3	119.2	121.8	122.9	125.7	118.7	119.9	120.8	122.9	124.3
8	127.0	119.1	119.3	120.9	123.2	124.7	128.4	120.6	121.5	122.3	124.4	126.0
9	129.3	120.6	120.9	122.3	124.5	126.3	130.6	122.3	122.8	123.6	125.9	127.7
10	131.2	122.0	122.3	123.6	126.0	127.8	132.6	123.4	124.2	124.7	127.2	129.3
11	133.4	123.3	123.6	124.8	127.2	129.2	134.3	124.5	125.4	125.7	128.5	130.7
12	135.4	124.6	124.9	126.0	128.6	130.5	136.1	125.7	126.4	126.8	129.6	132.0
13	137.3	125.8	125.9	127.2	129.4	131.5	137.9	126.9	127.5	127.9	130.7	133.1
14	139.0	126.9	127.0	128.4	130.4	132.7	139.6	127.8	128.6	128.9	131.7	134.2
15	140.9	128.0	128.4	129.5	131.6	133.4	141.1	128.8	129.3	129.8	132.6	135.1
16	142.4	129.0	129.6	130.6	132.7	134.7	142.6	129.3	130.0	130.6	133.5	136.1
17	144.3	129.9	130.3	131.7	133.5	136.2	144.3	130.6	130.9	131.3	134.5	137.3
18	146.0	130.7	131.4	132.9	135.0	137.6	145.7	131.4	131.7	132.3	135.7	138.4
19	147.9	131.6	132.4	133.9	136.1	138.8	147.3	132.4	132.6	133.5	136.6	139.5
20	149.7	132.6	133.5	134.9	137.2	139.8	149.1	133.4	133.8	134.7	137.6	140.6
21	151.6	133.7	134.5	135.9	138.2	141.0	150.6	134.3	134.9	135.7	138.5	141.7
22	153.4	134.6	135.6	137.0	139.4	142.2	152.0	135.0	135.9	136.4	139.4	142.8
23	155.1	135.5	136.6	138.0	140.3	143.3	153.6	135.6	136.7	137.3	140.3	143.7
24	156.7	136.5	137.5	139.0	141.3	144.2	155.3	136.4	137.6	138.2	141.1	144.6
25	158.3	137.4	138.6	140.0	142.3	145.2	156.9	137.2	138.6	139.0	142.1	145.5
26	160.1	138.4	139.5	141.0	143.3	145.7	158.5	138.4	139.5	140.1	143.2	146.4
27	162.1	139.4	140.2	141.8	144.1	147.0	160.2	139.2	140.3	140.8	144.0	147.4
28	163.8	140.6	141.0	142.7	144.9	148.2	162.0	140.0	141.2	141.6	145.0	148.4
29	165.7	141.6	141.9	143.6	145.9	149.0	163.8	140.7	142.1	142.6	145.9	149.4
30	167.6	142.6	142.9	144.4	147.0	150.0	165.5	141.7	142.9	143.3	146.7	150.4
31	169.7	143.4	143.9	145.3	147.9	150.8	167.3	142.6	143.7	144.2	147.5	151.2
32	171.5	144.3	144.9	146.1	148.7	151.8	169.3	143.4	144.5	145.3	148.3	151.9
33	173.2	145.4	145.7	146.9	149.4	152.6	171.0	144.3	145.3	146.1	149.1	152.7
34	175.2	146.2	146.5	147.8	150.2	153.3	172.7	144.9	146.2	146.7	150.0	153.6
35	177.0	146.9	147.3	148.7	151.2	154.3	174.7	145.4	147.0	147.5	150.8	154.4
36	178.9	147.4	148.1	149.6	151.9	155.1	176.5	146.4	147.9	148.5	151.6	155.2
37	181.1	147.9	148.9	150.3	152.6	155.7	178.4	147.2	148.5	149.4	152.4	156.0
38	183.2	148.8	149.6	150.9	153.2	156.4	180.3	147.9	149.2	150.1	153.1	156.7
39	185.4	149.5	150.4	151.8	154.1	157.1	182.3	148.7	149.8	150.9	153.6	157.3
40	187.3	150.1	151.2	152.4	154.6	157.4	184.5	149.5	150.5	151.7	154.4	158.0
41	189.5	150.6	151.8	153.0	155.4	158.1	186.7	150.2	151.5	152.4	155.1	158.6
42	191.7	150.9	152.4	153.6	156.0	158.8	189.0	150.9	152.1	153.1	155.8	159.2
43	193.8	151.7	153.2	154.2	156.7	159.6	191.2	151.4	152.7	153.8	156.5	159.8
44	195.8	152.4	153.8	154.9	157.1	159.9	193.2	152.6	153.4	154.3	157.2	160.5
45	198.1	152.9	154.3	155.5	157.7	160.5	195.3	153.4	154.0	155.0	157.7	161.1
46	200.2	153.6	154.9	156.2	158.2	161.0	197.6	153.2	154.8	155.8	158.4	161.6
47	202.3	154.4	155.6	156.8	158.8	161.4	199.7	154.7	155.6	156.3	159.1	162.1
48	204.1	155.4	156.0	157.3	159.3	161.9	201.7	157.4	156.2	156.9	159.7	162.7
49	206.4	156.9	156.5	157.8	159.9	162.3	204.0	158.5	156.7	157.6	160.3	163.2
50	208.6	159.3	157.5	158.4	160.5	162.9	206.5	163.9	157.7	158.1	160.7	163.7
51	211.0	163.9	157.9	158.9	161.0	163.3	208.8	169.2	158.5	158.8	161.4	164.1
52	213.4	170.4	158.6	159.4	161.5	163.6	211.2	175.1	158.8	159.4	162.1	164.5
53	215.3	178.4	160.3	159.9	162.1	163.9	213.7	181.1	160.4	159.9	162.4	165.0
54	217.7	187.6	162.1	160.4	162.6	164.4	216.2	189.0	163.8	160.7	162.8	165.5

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	SD	SD	SD	SD	SD	SD	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839067	839339	839340	839341	839342	839343	839070	839354	839355	839356	839357	839358
Date	9/25/08	10/1/08	10/1/08	10/1/08	10/1/08	10/1/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Distillation, D86 (^{o}F)												
55	219.8	194.9	165.3	160.9	162.9	164.9	218.6	195.3	167.5	161.6	163.4	165.9
56	221.8	200.4	172.3	161.7	163.2	165.4	220.9	200.5	171.5	161.9	163.9	166.3
57	224.4	204.9	182.9	162.5	163.6	165.7	223.6	205.4	178.2	163.4	164.5	166.7
58	226.7	208.9	193.2	163.2	164.1	165.9	226.2	209.6	188.1	164.9	164.8	167.0
59	228.8	212.8	201.4	165.8	164.5	166.3	228.8	213.7	197.7	168.1	165.4	167.4
60	231.0	216.6	207.9	173.4	165.1	166.7	231.4	217.1	205.6	174.9	166.0	167.8
61	233.5	219.6	213.9	187.5	165.7	167.0	234.0	220.3	211.7	184.6	166.5	168.1
62	235.8	222.1	218.6	202.8	165.7	167.1	236.4	223.6	216.5	195.2	167.2	168.4
63	238.3	224.9	222.4	212.7	166.8	167.5	238.8	226.8	220.8	205.6	167.8	168.8
64	240.9	227.3	226.3	219.6	167.6	168.1	241.5	230.1	224.6	214.1	168.6	169.2
65	243.4	229.4	229.2	224.5	168.0	168.5	244.2	233.0	227.6	220.3	170.3	169.6
66	245.9	231.7	231.9	228.8	170.9	169.0	246.8	235.6	230.8	225.5	173.2	169.8
67	248.2	234.4	235.0	232.2	175.0	169.3	249.2	239.1	234.0	230.0	180.5	170.1
68	250.7	237.6	237.8	235.3	198.9	169.2	251.7	241.7	236.9	234.3	195.0	170.5
69	253.7	240.6	240.5	238.0	219.5	169.4	254.2	244.2	233.1	238.3	214.9	170.8
70	256.7	243.1	242.9	240.5	227.9	169.6	256.9	247.3	233.3	241.6	227.6	171.2
71	259.6	245.8	245.8	243.0	234.0	169.8	259.6	249.6	242.3	244.6	235.3	171.6
72	262.8	248.5	248.1	246.1	238.5	170.2	262.1	252.0	248.3	247.5	241.0	171.9
73	265.5	250.7	249.9	249.6	241.7	170.6	264.7	255.3	252.7	250.5	245.0	172.3
74	269.0	253.1	253.5	253.2	245.1	170.8	267.2	257.9	255.9	253.6	248.9	172.7
75	272.1	256.6	258.0	256.5	249.6	171.1	269.5	260.8	257.8	257.0	253.1	173.5
76	274.8	260.8	262.0	259.5	253.7	172.1	271.9	263.6	259.2	259.9	256.8	174.6
77	277.6	264.6	265.3	262.2	258.1	171.4	274.5	266.9	262.2	262.6	260.5	178.5
78	281.3	267.8	265.2	264.0	262.0	184.7	277.0	269.8	266.7	265.3	263.6	211.5
79	284.9	271.7	265.8	266.4	265.4	231.9	279.5	272.6	271.0	268.3	266.6	246.5
80	289.0	276.2	272.1	271.0	266.6	249.5	282.0	275.8	274.4	271.3	269.5	254.6
81	292.6	280.5	279.6	276.7	269.1	256.2	284.8	278.6	277.3	273.7	272.1	260.1
82	296.1	284.6	285.1	282.1	273.9	260.3	287.7	281.7	280.1	276.8	275.2	264.6
83	299.9	288.5	289.7	286.3	278.3	264.9	290.5	284.8	282.5	280.5	278.2	268.7
84	303.6	293.0	293.8	290.3	283.5	271.4	293.5	288.2	284.0	284.2	281.8	273.3
85	307.5	296.9	298.3	295.2	290.2	277.5	296.5	291.2	287.4	287.8	285.4	277.6
86	310.2	300.1	303.1	300.0	296.1	283.8	298.5	294.9	292.6	289.1	289.0	281.4
87	316.0	305.5	307.4	304.6	302.1	290.3	300.7	298.0	296.1	292.6	291.4	285.4
88	321.6	312.1	310.3	309.7	306.7	296.8	304.8	301.3	299.6	298.0	294.2	289.3
89	326.5	318.2	313.5	314.4	311.2	302.1	309.0	303.5	303.2	301.8	299.2	292.8
90	331.9	323.3	319.8	320.0	316.7	306.6	312.4	307.0	306.8	303.0	303.7	296.1
91	337.1	326.8	327.3	324.3	322.5	314.0	315.8	312.2	310.3	307.3	308.0	300.4
92	342.8	331.3	334.1	329.0	326.5	320.9	319.1	315.9	313.1	313.1	311.2	305.5
93	348.8	338.9	341.1	337.8	334.4	327.3	322.5	320.5	317.1	317.5	314.6	310.0
94	355.6	347.1	348.3	346.4	343.0	335.9	326.5	325.7	322.0	321.1	320.2	315.3
95	364.4	356.6	356.3	355.4	353.1	346.4	331.3	330.9	326.7	326.2	326.1	321.9
96	374.3	368.1	366.7	365.9	364.8	355.0	337.7	336.3	333.2	333.1	332.6	327.3
97	389.1	382.0	382.9	380.6	379.3	370.7	346.2	344.0	341.0	341.5	340.2	334.8
98	410.5	402.5	403.2	399.8	398.9	391.6	357.1		351.1	352.2	352.2	347.3
99												
FBP	426.7	424.6	421.4	417.2	415.1	407.1	371.9	369.8	364.5	365.8	365.6	360.7
Recovered (%)	97.1	97.2	97.2	97.7	98.1	98.2	96.9	96.9	98.2	98.1	98.6	98.0
Residue (%)	1.0	0.8	1.0	0.9	1.0	0.8	0.8	0.8	0.6	0.8	0.8	0.8
Loss (%)	1.9	2.0	1.8	1.4	0.9	1.0	2.3	2.3	1.2	1.1	0.6	1.2
$T_{V/L=20}$ (^{o}F)	147.4	128.8	128.1	128.9	129.3	130.2	148.9	129.7	130.2	130.5	130.3	131.6
RON	89.0	93.4	94.7	95.7	97.3	99.9	94.5	97.7	98.3	98.9	99.6	101.4
MON	81.5	83.8	84.2	84.6	85.6	88.1	83.9	86.6	86.6	86.8	87.1	88.7
(R+M)/2	85.3	88.6	89.5	90.1	91.5	94.0	89.2	92.1	92.4	92.9	93.4	95.1

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	TX	TX	TX	TX	TX	TX	AR	AR	AR	AR	AR	AR
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839069	839349	839350	839351	839352	839353	839072	839364	839365	839366	839367	839368
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Dry Vapor Pressure Equivalent (psi)	7.54	9.40	9.39	9.32	9.27	8.97	7.88	9.40	9.32	9.32	9.23	9.04
Specific Gravity	0.7552	0.7543	0.7548	0.7556	0.7569	0.7615	0.7722	0.7693	0.7697	0.7696	0.7705	0.7732
Ethanol (Vol%)	0.00	10.02	12.47	15.55	20.04	29.89	0.00	9.92	12.97	15.49	20.75	31.30
Ethanol (Wt%)	0.00	10.54	13.12	16.33	21.02	31.17	0.00	10.23	13.37	15.98	21.39	32.14
Distillation, D86 (^{o}F)												
IBP	96.2	97.2	93.5	94.5	95.0	98.6	92.4	92.5	93.6	91.6	93.3	94.2
1	100.7	100.1	98.4	99.6	100.4	105.3	97.4	96.5	97.3	96.4	99.0	101.2
2	105.1	103.0	103.2	104.6	105.8	111.6	102.4	100.5	101.1	101.1	104.7	108.1
3	109.5	105.9	108.1	109.3	110.5	115.4	107.6	104.6	104.8	105.8	110.4	112.6
4	115.4	111.0	111.5	112.5	113.8	118.5	113.3	108.8	108.4	109.9	114.1	116.2
5	120.3	113.4	113.9	115.0	116.4	120.9	117.7	112.3	111.4	112.9	116.6	119.0
6	123.6	116.3	116.3	117.3	118.5	123.1	121.1	114.5	113.9	115.5	118.8	121.9
7	126.8	118.0	118.2	119.3	120.3	124.9	124.1	116.9	116.5	117.6	120.7	123.9
8	129.7	119.8	119.8	120.9	122.1	126.7	127.0	119.0	118.6	119.9	122.4	125.8
9	131.9	121.5	121.2	122.6	123.8	127.9	129.7	120.9	120.5	121.4	124.1	127.3
10	133.8	122.8	122.5	123.7	125.3	129.5	132.1	122.3	122.4	123.2	125.9	129.2
11	135.7	124.0	123.8	125.0	126.7	131.0	134.4	123.9	124.3	125.0	127.2	130.7
12	137.2	125.0	124.8	126.2	127.8	132.3	136.8	125.4	126.0	126.8	128.6	132.6
13	139.1	126.1	125.7	127.4	129.0	133.3	139.2	126.8	127.3	128.1	130.4	134.3
14	141.0	127.2	126.8	128.4	130.2	134.4	141.5	128.1	128.7	129.5	132.2	136.1
15	142.7	128.4	127.6	129.4	131.2	135.6	143.8	129.6	130.3	131.2	133.7	137.9
16	144.1	129.2	128.5	130.5	132.3	136.6	145.8	130.7	131.6	132.8	135.0	139.0
17	145.9	130.2	129.7	131.4	133.5	138.0	148.1	132.0	133.0	134.0	136.5	140.8
18	147.5	131.3	130.7	132.4	134.7	139.2	150.4	133.2	134.4	135.4	138.1	142.4
19	149.5	132.3	131.7	133.1	135.8	140.3	152.7	134.7	135.6	136.8	139.3	143.8
20	151.0	133.0	132.8	134.1	137.0	141.4	155.3	136.0	136.9	138.1	140.5	145.3
21	152.6	134.0	133.4	135.2	138.2	142.6	157.6	137.5	138.3	139.3	142.0	146.7
22	154.3	135.0	134.4	136.1	139.1	143.9	160.0	138.7	139.5	140.5	143.5	147.9
23	155.9	136.2	135.7	137.2	140.0	144.9	162.9	139.8	140.8	141.7	144.8	149.4
24	157.3	137.0	136.6	138.1	140.9	145.9	165.4	141.3	142.3	142.9	146.1	150.6
25	158.9	137.9	137.7	139.1	141.8	146.8	167.8	142.6	143.6	144.3	147.3	151.8
26	160.8	139.0	138.8	140.0	142.6	147.8	170.8	143.9	144.7	145.7	148.3	153.0
27	162.5	140.2	139.7	141.0	143.4	148.5	173.8	145.0	146.0	146.8	149.6	154.1
28	164.2	141.1	140.3	142.0	144.3	149.4	176.6	146.1	147.4	147.9	151.0	155.1
29	165.9	141.8	141.0	143.0	145.1	150.4	179.6	147.4	148.4	149.0	152.0	156.2
30	167.8	142.4	142.2	143.8	145.9	151.2	182.4	148.7	149.4	150.4	152.9	157.0
31	169.6	143.4	143.1	144.7	147.0	152.2	185.8	149.7	150.5	151.4	153.9	158.1
32	171.5	144.0	143.7	145.6	147.8	153.0	188.8	150.9	151.5	152.3	155.1	158.9
33	173.4	145.3	144.6	146.4	148.5	153.7	191.9	152.0	152.5	153.4	156.2	159.9
34	175.2	146.1	145.5	147.2	149.6	154.5	195.0	152.9	153.5	154.5	157.1	160.7
35	177.0	146.8	146.2	148.0	150.4	155.3	198.2	153.8	154.4	155.4	157.8	161.5
36	179.1	147.5	146.9	148.8	151.2	156.1	201.6	154.8	155.5	156.3	158.7	162.1
37	181.1	148.5	147.9	149.8	151.8	156.8	204.5	156.2	156.5	157.1	159.7	162.9
38	183.3	149.1	148.8	150.8	152.6	157.5	207.3	157.2	157.5	158.0	160.6	163.5
39	185.2	149.9	149.8	151.5	153.3	158.1	210.5	158.0	158.4	158.9	161.2	164.0
40	187.3	150.3	150.0	152.1	153.9	158.7	213.5	159.2	159.1	159.7	161.9	164.4
41	189.4	151.1	151.0	152.7	154.7	159.3	216.9	160.6	159.9	160.5	162.6	165.0
42	191.5	152.3	151.9	153.4	155.5	159.9	219.7	161.8	160.6	161.0	163.2	165.7
43	193.7	153.1	152.7	154.1	156.2	160.6	222.6	164.0	161.3	161.7	163.8	166.0
44	195.7	154.7	153.0	154.7	156.8	161.3	225.4	167.1	162.2	162.6	164.6	166.5
45	198.1	155.8	153.5	155.5	157.5	161.8	228.3	170.8	162.9	163.0	165.0	166.9
46	200.3	156.3	154.4	155.9	158.0	162.3	231.0	175.9	163.3	163.7	165.4	167.3
47	202.4	156.0	154.8	156.6	158.5	162.8	233.2	183.0	164.4	164.2	165.9	167.6
48	204.4	159.4	155.5	157.3	159.1	163.2	235.5	192.0	165.6	165.1	166.7	167.8
49	206.9	160.5	156.3	158.1	159.6	163.7	238.0	202.1	167.0	165.3	166.7	168.1
50	209.2	164.6	156.7	158.8	160.3	164.2	240.5	211.7	171.5	165.9	167.1	168.5
51	211.3	170.8	157.3	159.2	160.9	164.6	242.6	218.6	179.8	166.9	167.9	169.0
52	213.7	178.8	158.2	159.9	161.3	165.1	244.8	224.4	191.9	168.8	167.9	169.2
53	216.4	186.0	158.8	160.2	162.0	165.5	247.0	229.2	206.1	173.8	168.7	169.3
54	218.5	192.7	160.9	160.7	162.6	165.9	249.0	233.3	218.1	180.5	169.3	169.8

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	TX	TX	TX	TX	TX	TX	AR	AR	AR	AR	AR	AR
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839069	839349	839350	839351	839352	839353	839072	839364	839365	839366	839367	839368
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08
Distillation, D86 (^{o}F)												
55	220.7	198.4	164.8	162.1	163.0	166.4	251.2	236.3	226.5	190.5	169.7	169.9
56	223.2	203.5	170.4	162.7	163.4	166.7	253.1	239.4	232.6	207.6	170.0	170.3
57	225.6	208.0	178.1	162.9	163.9	167.1	254.9	243.4	237.0	221.6	170.7	170.6
58	227.8	212.1	188.0	163.5	164.5	167.4	256.8	247.2	240.4	229.0	172.7	170.8
59	230.4	215.5	198.0	166.4	165.0	167.8	258.6	249.4	243.9	235.0	174.8	170.8
60	233.0	219.3	205.8	172.8	165.4	168.2	260.5	251.6	246.8	241.0	177.7	171.2
61	235.4	222.3	211.4	183.3	165.9	168.6	262.6	253.3	249.5	245.3	187.9	171.6
62	237.8	225.1	216.1	197.8	166.6	168.8	264.5	255.4	252.2	248.5	217.9	171.9
63	240.1	228.3	220.2	209.1	167.1	169.2	266.6	257.4	255.2	251.2	236.3	171.8
64	242.5	231.1	224.3	216.4	167.9	169.6	268.8	259.4	257.5	253.8	243.1	172.0
65	245.0	233.7	227.6	223.0	169.0	170.0	270.7	261.1	259.4	256.7	248.5	172.5
66	247.5	237.1	231.1	227.9	171.7	170.2	272.6	263.9	261.4	259.5	252.4	173.3
67	250.4	238.9	235.0	232.0	177.1	170.8	274.9	266.3	263.5	261.7	256.0	173.5
68	253.1	242.3	238.1	235.0	191.7	171.4	277.0	268.4	265.8	263.1	259.3	174.4
69	255.9	245.4	240.5	238.5	213.0	172.1	279.1	271.0	268.5	263.8	262.3	175.0
70	258.4	248.3	243.6	241.9	226.0	172.6	281.3	273.4	270.4	266.7	265.2	177.0
71	260.5	250.8	246.9	245.4	233.3	173.1	283.5	275.7	271.9	270.6	268.1	197.8
72	263.0	253.1	250.1	248.7	239.3	173.7	285.4	277.8	274.7	274.2	270.9	244.2
73	265.6	256.6	252.7	251.8	244.4	174.4	287.9	279.7	278.1	277.1	273.7	256.4
74	268.0	259.2	255.2	254.8	248.8	175.7	290.0	282.1	281.1	279.5	276.1	260.4
75	270.7	260.8	257.8	256.9	252.5	177.4	292.2	284.5	283.4	281.7	277.9	263.4
76	273.5	264.7	260.6	259.3	256.1	179.9	294.4	287.1	285.5	283.8	279.9	267.8
77	275.9	268.7	263.2	261.8	259.6	193.9	296.4	289.9	288.2	286.6	282.9	272.5
78	278.2	272.0	266.7	265.7	262.9	239.0	298.8	292.7	291.1	288.9	285.5	276.5
79	280.7	274.6	270.0	269.4	265.8	252.0	300.8	295.2	293.6	291.6	288.1	280.0
80	283.6	277.4	273.2	272.4	267.9	257.3	302.7	298.1	296.0	294.2	290.6	283.3
81	286.3	280.7	275.8	275.6	269.6	262.5	305.5	300.1	298.7	297.0	294.0	286.2
82	288.8	283.1	279.2	278.9	272.7	266.6	307.6	303.2	301.7	299.7	296.4	289.2
83	289.3	283.8	282.8	280.6	277.1	271.4	309.5	305.8	304.4	302.5	297.4	292.1
84	292.9	286.5	285.9	279.3	281.2	275.1	311.2	308.2	307.2	305.2	301.5	295.1
85	297.7	292.4	289.0	287.4	284.7	279.4	314.6	310.9	309.6	308.1	306.1	298.1
86	301.5	296.7	291.1	292.3	288.6	282.8	317.6	313.8	310.1	310.0	308.9	301.8
87	304.8	300.1	293.8	295.8	293.1	286.8	320.6	315.9	313.2	311.4	309.8	305.0
88	308.1	303.5	299.4	297.5	297.2	291.0	323.4	318.5	317.7	316.4	313.9	308.6
89	311.3	306.9	304.0	298.3	301.2	295.4	326.7	322.4	321.1	320.4	318.1	312.5
90	314.4	310.9	308.3	305.4	305.4	298.6	329.6	326.8	324.7	324.3	321.7	316.9
91	317.5	314.8	311.8	310.6	309.4	303.3	332.9	330.8	326.2	327.8	323.6	320.2
92	321.3	316.9	315.8	315.2	313.2	308.8	337.0	334.7	330.4	331.7	328.5	324.3
93	325.4	320.5	319.3	319.4	317.3	313.8	341.6	339.0	336.6	335.4	334.4	329.2
94	330.4	326.9	323.1	322.4	322.9	319.2	346.8	344.3	342.1	339.0	341.1	335.2
95	335.5	332.7	329.2	325.4	329.1	325.8	353.1	349.8	348.8	346.7	347.0	341.6
96	340.8	339.9	336.6	333.9	335.8	332.8	363.1	357.6	357.7	357.0	357.6	349.3
97	348.9	348.9	346.0	343.7	343.1	342.6	379.3	373.9	371.4	371.6	374.1	364.0
98	362.4	362.1	358.5	357.0	354.5	356.5	404.6	401.3	392.0		399.3	386.1
99	377.5	373.9						412.0				
FBP	380.3	376.7	371.5	372.3	368.5	368.3	422.8	418.3	416.1	413.2	416.1	399.3
Recovered (%)	97.4	97.6	97.6	97.9	97.9	98.4	97.5	97.5	97.4	97.6	97.3	98.2
Residue (%)	0.7	0.8	0.7	0.6	0.8	0.9	0.9	0.9	0.7	0.9	1.0	0.9
Loss (%)	1.9	1.6	1.7	1.5	1.3	0.7	1.6	1.6	1.9	1.5	1.7	0.9
$T_{V/L=20}$ (^{o}F)	149.8	129.0	129.3	129.2	129.1	130.7	150.6	130.3	131.0	129.9	130.7	132.4
RON												
MON												
(R+M)/2												

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	AR	AR	AR	AR	AR	AR	WV	WV	WV	WV	WV	WV
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839071	839359	839360	839361	839362	839363	839074	839374	839375	839376	839377	839378
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	11/4/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08
Dry Vapor Pressure Equivalent (psi)	8.20	9.59	9.60	9.55	9.52	9.17	8.01	9.31	9.35	9.17	9.08	8.76
Specific Gravity	0.7386	0.7400	0.7402	0.7417	0.7444	0.7508	0.7367	0.7365	0.7376	0.7393	0.7423	0.7486
Ethanol (Vol%)	0.00	9.80	12.66	15.35	20.14	30.23	0.00	10.37	13.11	16.10	20.78	32.07
Ethanol (Wt%)	0.00	10.51	13.58	16.43	21.48	31.96	0.00	11.18	14.11	17.29	22.23	34.01
Distillation, D86 (^{o}F)												
IBP	92.8	93.2	93.0	94.4	95.2	95.6	85.2	96.8	92.8	96.1	97.7	100.8
1	96.5	98.3	96.4	99.0	100.8	105.0	92.1	104.2	98.9	101.6	103.0	105.8
2	100.3	103.4	99.8	103.6	106.4	111.0	99.1	111.6	105.0	107.1	108.3	110.9
3	104.0	107.4	103.2	107.8	110.1	114.1	106.1	118.9	111.1	113.3	113.6	115.9
4	108.8	110.2	106.8	110.7	112.6	116.5	114.2	123.9	116.9	118.6	119.3	122.5
5	113.1	112.4	109.4	112.9	114.5	118.5	120.7	127.4	121.3	122.6	123.5	126.8
6	116.0	114.1	111.6	114.6	116.6	120.4	125.6	130.5	124.6	126.1	127.2	130.4
7	118.2	115.7	113.4	116.3	118.2	122.1	130.8	132.6	127.5	129.5	130.4	133.9
8	120.4	117.0	114.9	117.9	119.6	123.4	135.8	134.9	130.4	132.3	133.0	136.4
9	122.4	118.3	116.4	119.0	120.8	124.7	140.6	137.4	132.9	134.5	135.3	139.5
10	124.2	119.5	117.5	120.1	121.8	126.0	145.5	139.4	135.2	136.6	137.7	141.5
11	125.9	120.3	118.7	121.0	123.1	127.1	150.6	141.1	137.5	138.5	139.8	143.5
12	127.5	121.2	119.6	122.0	123.9	128.3	155.6	142.6	139.5	140.4	141.9	145.6
13	129.2	122.0	120.6	123.1	125.0	129.3	160.0	144.3	141.7	142.5	143.5	147.3
14	130.7	122.8	121.6	123.8	126.0	130.5	164.2	146.1	143.5	144.5	145.4	148.8
15	132.1	123.5	122.4	124.6	126.8	131.6	168.9	147.7	145.1	146.2	147.0	150.4
16	133.4	124.4	123.2	125.3	127.9	132.7	172.9	149.2	146.7	148.0	148.4	151.7
17	134.7	125.2	124.0	126.3	128.8	133.6	176.9	150.4	148.1	149.3	149.7	152.8
18	136.1	126.0	124.8	127.4	129.7	134.6	181.6	151.5	149.5	150.8	151.0	153.7
19	137.4	126.8	125.5	128.4	130.8	135.6	185.4	152.3	150.8	152.3	152.2	154.8
20	138.8	127.6	126.3	129.5	131.7	136.8	189.4	153.1	152.1	153.3	153.2	155.8
21	140.4	128.6	127.5	130.5	132.9	137.9	192.7	154.1	153.1	154.3	154.2	156.6
22	141.7	129.5	128.8	131.2	133.8	139.1	196.3	155.2	153.9	155.4	155.2	157.4
23	143.1	130.4	129.8	132.3	134.7	140.2	198.8	156.1	154.9	156.3	155.9	158.0
24	144.6	131.2	130.9	133.1	135.7	141.2	201.5	156.9	155.8	157.0	156.7	158.6
25	146.1	132.0	132.1	134.3	136.9	142.3	203.7	157.7	156.5	157.7	157.4	159.4
26	147.8	133.1	132.9	135.3	137.8	143.4	206.2	158.3	157.2	158.4	157.9	159.7
27	149.6	134.0	133.3	136.2	138.8	144.5	208.0	159.1	157.9	159.1	158.5	160.3
28	151.1	134.9	134.6	137.2	140.0	145.5	209.7	160.0	158.6	159.6	159.0	160.7
29	152.8	135.9	135.8	138.1	140.8	146.6	211.3	160.5	159.5	160.2	159.5	161.1
30	154.5	136.9	136.6	139.3	142.1	147.7	212.5	160.7	160.0	160.6	159.7	161.3
31	156.1	137.8	137.5	140.2	142.7	148.8	213.4	161.7	160.2	160.7	160.3	161.7
32	158.2	138.9	138.3	141.3	143.9	149.9	214.8	163.0	160.4	161.1	160.8	162.0
33	160.5	139.7	139.2	142.3	144.9	150.8	216.1	164.4	160.7	161.6	161.1	162.3
34	162.3	140.8	140.4	143.0	146.0	151.8	217.1	166.9	161.4	161.8	161.4	162.6
35	164.3	141.7	141.7	144.1	146.9	152.7	217.9	171.1	161.9	162.1	161.7	162.7
36	166.2	142.5	142.5	145.1	147.9	153.7	219.0	176.9	162.3	162.4	162.0	163.1
37	168.5	143.5	143.4	146.1	148.8	154.6	219.9	184.2	163.2	163.2	162.2	163.3
38	171.0	144.5	144.3	147.0	149.8	155.6	220.6	192.3	164.3	162.7	162.5	163.3
39	173.2	145.5	145.0	147.9	150.7	156.5	221.3	200.0	165.4	163.0	162.6	163.6
40	175.4	146.4	146.1	149.0	151.5	157.2	222.2	206.4	166.7	163.8	162.8	164.0
41	177.8	147.1	146.9	149.9	152.3	157.9	222.7	210.9	169.1	163.8	163.1	164.0
42	180.2	148.1	148.0	150.7	153.4	158.6	223.1	214.3	173.3	164.5	163.4	164.2
43	183.1	149.1	149.2	151.6	154.2	159.4	223.9	216.6	180.0	165.8	163.5	164.5
44	185.9	150.0	150.0	152.4	154.9	160.1	224.6	218.2	190.2	166.9	163.7	164.4
45	188.5	150.8	150.9	153.2	155.7	160.8	225.6	220.2	200.7	168.3	164.1	164.7
46	191.2	151.6	151.9	154.2	156.5	161.1	226.3	221.6	208.6	170.8	164.4	164.7
47	194.1	152.4	152.8	155.2	157.4	161.7	226.8	222.8	213.5	174.9	164.5	164.8
48	196.8	153.5	153.5	156.0	158.0	162.6	227.6	224.0	216.9	183.6	164.7	165.3
49	199.3	154.7	154.2	156.7	158.7	163.3	228.3	225.0	219.7	195.8	164.9	165.4
50	202.3	155.8	154.9	157.3	159.4	163.8	228.8	226.4	221.8	206.3	165.1	165.4
51	205.4	158.3	155.7	157.9	159.9	164.3	229.5	227.8	223.6	213.3	165.4	165.6
52	208.0	161.4	156.5	158.5	160.6	164.7	230.6	228.8	224.9	217.0	165.6	165.8
53	210.9	165.1	156.9	159.2	161.2	165.1	231.3	228.9	226.3	219.7	166.2	165.9
54	213.9	170.7	157.6	159.7	161.7	165.5	232.1	228.6	227.4	222.0	166.8	165.9

ASTM Class	A	A	A	A	A	A	A	A	A	A	A	A
State	AR	AR	AR	AR	AR	AR	WV	WV	WV	WV	WV	WV
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839071	839359	839360	839361	839362	839363	839074	839374	839375	839376	839377	839378
Date	9/25/08	10/3/08	10/3/08	10/3/08	10/3/08	10/3/08	11/4/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08
Distillation, D86 (^{o}F)												
55	216.8	178.2	158.4	160.1	162.4	165.5	232.7	229.1	228.8	224.3	168.1	165.9
56	219.8	187.8	159.1	160.6	162.9	166.0	233.5	229.8	229.5	226.2	169.4	166.3
57	222.6	197.4	161.1	161.9	163.5	166.6	234.1	230.8	228.4	227.7	172.6	166.5
58	225.2	205.0	163.9	163.1	164.1	167.0	234.9	231.2	229.1	229.2	182.2	166.6
59	228.3	210.7	169.2	163.8	164.5	167.4	235.7	231.7	230.9	230.5	202.4	166.6
60	231.5	214.9	180.6	163.5	165.3	167.8	236.6	231.0	231.8	231.6	216.1	166.8
61	234.0	218.8	194.9	164.4	165.6	168.0	237.4	231.7	232.5	232.6	221.5	166.7
62	236.4	222.6	206.3	170.3	165.7	168.4	238.4	234.4	232.9	233.4	224.1	167.0
63	239.4	225.3	213.9	184.8	166.1	168.8	239.3	236.9	232.5	233.9	226.4	167.2
64	242.5	228.3	219.8	202.3	166.5	169.0	240.3	238.6	232.8	234.7	228.7	167.2
65	245.5	232.1	225.2	214.3	166.9	169.2	241.3	239.6	235.0	235.5	230.4	167.6
66	248.2	235.4	229.6	222.4	167.9	169.5	242.2	240.2	237.4	235.8	231.6	167.6
67	251.2	238.5	232.8	228.8	168.7	169.8	243.3	240.6	239.1	236.2	233.1	167.8
68	254.0	242.2	236.3	233.5	168.5	170.2	244.6	241.1	239.7	237.3	235.0	167.8
69	256.9	245.4	240.0	236.4	170.7	170.5	245.9	241.8	240.3	239.0	237.0	168.3
70	260.0	248.2	243.6	239.3	208.9	170.8	247.2	242.5	241.3	241.2	238.8	168.1
71	262.9	247.6	247.3	243.7	228.5	171.0	248.6	244.0	242.4	242.7	239.8	168.7
72	265.9	248.1	251.0	247.2	235.7	171.3	250.2	246.0	243.4	243.0	238.3	169.4
73	269.1	252.8	253.2	251.1	240.7	171.7	251.7	247.9	244.7	244.0	239.0	170.7
74	272.5	259.2	255.0	254.7	246.0	172.3	253.4	250.0	246.4	246.0	241.8	181.2
75	275.9	264.2	258.9	257.4	251.8	172.6	255.2	252.1	248.4	248.2	241.6	227.0
76	278.8	268.3	263.6	260.8	256.6	173.0	257.5	254.2	250.5	250.3	243.6	232.8
77	282.0	271.7	267.9	265.3	261.8	173.3	260.0	256.5	252.3	252.4	246.0	237.5
78	285.7	273.2	271.5	270.6	266.1	175.1	262.4	258.6	254.3	254.5	248.0	240.5
79	289.0	271.8	275.4	275.5	269.5	219.5	265.2	260.8	256.4	256.6	250.3	243.7
80	292.4	277.6	279.5	279.5	272.7	254.4	268.1	263.4	258.9	258.9	252.7	246.7
81	296.2	284.4	283.3	283.2	277.2	263.1	271.5	266.5	261.8	261.8	256.0	250.1
82	300.0	290.5	287.5	287.4	281.4	270.6	275.4	269.8	265.0	264.6	259.3	253.3
83	303.6	295.5	291.9	291.2	285.7	276.7	279.6	273.4	268.8	267.9	262.6	257.0
84	304.9	300.3	296.4	294.9	286.7	282.0	284.1	277.6	272.8	271.5	265.8	260.9
85	309.6	304.1	300.4	298.7	292.6	287.3	288.7	282.0	277.0	276.1	268.8	264.1
86	315.8	308.1	304.9	303.9	299.4	292.5	294.4	286.7	281.8	281.3	273.5	266.7
87	320.0	312.3	309.5	309.2	306.0	297.4	299.9	291.1	287.1	286.7	279.3	270.8
88	324.0	316.4	313.0	313.8	312.2	302.9	305.6	296.1	293.1	292.6	285.3	276.5
89	327.9	320.5	316.5	316.6	317.1	308.8	311.5	302.8	299.3	299.1	292.2	282.1
90	331.8	325.2	322.3	319.5	321.4	314.8	317.3	310.2	306.3	306.0	299.1	290.0
91	335.5	330.2	328.2	326.4	325.5	320.8	323.7	317.2	312.9	312.9	306.2	298.2
92	339.0	335.1	333.7	332.1	330.8	326.7	329.0	324.0	319.6	320.0	313.9	307.2
93	343.6	339.9	339.2	337.6	336.9	332.3	332.1	330.4	326.5	326.9	321.4	315.9
94	349.1	343.8	344.7	343.3	342.5	338.5	338.0	336.0	332.9	333.6	328.6	323.5
95	354.1	350.4	349.2	350.0	347.5	345.5	345.1	342.5	338.6	339.0	335.1	330.0
96	362.8	358.4	356.9	357.5	356.4	353.6	352.4	350.3	346.2	346.4	342.9	340.7
97	376.0	368.2	368.1	366.7	366.1	364.6	364.7	360.8	355.1	358.0	352.5	350.6
98	392.3	381.3	383.2	381.3	379.4	379.6		378.2	371.1	376.1	368.9	362.6
99					388.7							
FBP	406.6	393.8	397.4	398.2	393.4	389.7	399.6	396.1	391.3	390.0	389.3	385.5
Recovered (%)	97.0	98.2	97.5	97.9	98.3	98.7	97.3	97.3	97.4	98.0	97.4	97.5
Residue (%)	0.8	0.8	0.7	0.7	0.8	0.9	1.0	0.7	0.6	0.8	0.7	0.8
Loss (%)	2.2	1.0	1.8	1.4	0.9	0.4	1.7	2.0	2.0	1.2	1.9	1.7
$T_{V/L=20}$ (^{o}F)	141.0	125.3	126.0	126.1	126.3	127.9	160.2	134.9	135.3	136.1	136.5	138.4
RON	91.4	95.6	96.2	96.8	98.3	100.2	97.0	100.7	101.4	102.0	101.9	102.1
MON	82.1	84.4	84.8	85.2	85.7	87.2	91.3	91.0	91.8	92.1	92.3	91.8
(R+M)/2	86.8	90.0	90.5	91.0	92.0	93.7	94.2	95.9	96.6	97.1	97.1	97.0

ASTM Class	A	A	A	A	A	A	B	B	B	B	B	B
State	WV	WV	WV	WV	WV	WV	NE	NE	NE	NE	NE	NE
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839073	839369	839370	839371	839372	839373	895211	895212	895213	895214	895215	895216
Date	11/4/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09
Dry Vapor Pressure Equivalent (psi)	8.05	9.49	9.47	9.51	9.39	9.16	8.93	9.69	9.67	9.59	9.46	9.36
Specific Gravity	0.7431	0.7423	0.7436	0.7447	0.7477	0.7533	0.7322	0.7373	0.7387	0.74	0.743	0.749
Ethanol (Vol%)	0.00	9.96	11.81	13.63	19.33	31.47	0.00	10.18	12.49	14.89	20.05	29.89
Ethanol (Wt%)	0.00	10.65	12.61	14.53	20.53	33.17	0.00	10.96	13.43	15.97	21.42	31.69
Distillation, D86 (^{o}F)												
IBP	90.3	93.3	91.5	92.6	95.0	95.1	86.0	98.1	95.5	94.5	94.8	98.4
1	96.8	99.1	98.4	97.1	105.4	102.3	93.1	104.3	100.6	100.8	100.2	104.7
2	103.3	105.0	105.4	101.6	112.8	109.4	100.1	110.1	105.8	107.2	105.7	110.7
3	108.9	110.1	109.2	106.3	115.4	113.5	106.0	112.5	109.7	110.7	110.1	114.0
4	113.5	112.3	112.0	110.6	117.8	116.1	109.9	114.6	112.4	112.9	112.9	117.1
5	116.9	114.6	113.8	113.3	119.8	118.8	112.9	116.3	114.7	115.1	115.1	119.1
6	119.7	116.4	115.9	115.5	121.4	121.0	115.6	117.8	116.4	117.0	117.3	121.4
7	122.2	118.0	117.5	117.4	123.0	123.0	117.9	118.9	118.1	118.7	119.1	123.1
8	124.5	119.6	119.1	119.1	124.3	124.7	120.2	120.2	119.5	120.2	120.6	124.4
9	126.6	120.9	120.4	120.6	125.6	126.1	122.4	121.4	120.8	121.4	122.0	126.0
10	128.5	122.0	121.8	122.0	126.8	127.6	124.5	122.4	122.0	122.4	123.3	127.3
11	130.2	123.1	122.8	123.3	128.0	129.3	126.4	123.5	123.0	123.6	124.6	128.6
12	132.0	124.1	124.1	124.5	129.0	130.5	128.3	124.3	123.9	124.8	125.7	129.5
13	133.7	125.2	125.2	125.6	130.0	131.8	129.9	125.2	125.0	125.8	126.9	130.6
14	135.3	126.3	126.3	126.7	131.0	132.9	131.5	126.0	125.9	126.9	128.1	132.0
15	136.9	127.1	127.2	127.8	132.1	134.1	133.3	127.1	126.8	127.8	129.2	133.1
16	138.6	128.2	128.2	129.0	133.1	135.4	135.0	128.1	127.8	129.2	130.0	134.4
17	140.4	129.3	129.2	130.0	134.1	136.5	136.7	129.0	129.0	130.2	131.2	135.6
18	142.0	130.3	130.3	130.8	135.1	137.7	138.4	130.2	130.2	131.3	132.6	136.6
19	143.6	131.3	131.6	131.8	136.1	138.9	140.1	131.1	131.0	132.4	133.6	137.6
20	145.3	132.2	132.5	133.0	137.1	140.2	141.7	132.2	131.9	133.4	134.5	138.8
21	147.0	133.2	133.6	134.0	138.1	141.2	143.3	133.1	132.8	134.4	135.7	140.2
22	148.6	134.1	134.6	135.0	139.2	142.3	145.0	133.9	133.8	135.4	136.8	141.1
23	150.4	135.2	135.5	136.1	140.4	143.4	146.8	134.8	134.7	136.3	137.9	142.7
24	152.1	136.2	136.7	137.1	141.5	144.6	148.7	135.5	135.5	137.5	139.0	143.8
25	153.8	137.0	137.6	138.0	142.5	145.4	150.7	136.4	136.6	138.6	140.0	144.7
26	155.7	138.0	138.5	139.1	143.3	146.4	152.6	137.6	137.8	139.5	141.1	145.8
27	157.5	138.9	139.2	140.0	144.4	147.4	154.6	138.6	138.8	140.4	142.0	146.8
28	159.3	139.8	140.3	141.0	145.5	148.6	156.6	139.4	139.6	141.4	143.1	147.8
29	161.1	140.6	141.4	142.0	146.3	149.3	158.6	140.3	140.6	142.3	144.2	148.7
30	163.0	141.6	142.0	142.9	147.1	150.4	160.7	141.2	141.6	143.0	145.1	149.7
31	164.9	142.5	142.7	143.7	148.2	151.5	162.9	142.3	142.6	143.9	146.0	150.5
32	167.0	143.3	143.8	144.6	149.1	152.4	165.0	143.0	143.5	144.9	146.9	151.4
33	169.1	144.0	144.8	145.5	149.9	153.1	167.2	143.8	144.3	146.0	147.9	152.4
34	171.1	144.8	145.7	146.4	150.9	154.0	169.6	144.8	145.2	146.6	148.8	153.2
35	173.2	145.4	146.7	147.4	151.7	154.7	171.8	145.3	146.1	147.5	149.7	154.0
36	175.4	146.4	147.4	148.4	152.5	155.6	174.1	146.2	147.0	148.6	150.5	154.9
37	177.7	147.4	148.2	149.2	153.1	156.3	176.6	147.1	147.9	149.4	151.2	155.5
38	180.0	148.5	149.0	150.0	153.8	157.1	179.1	147.9	148.7	150.2	152.0	156.2
39	182.4	149.4	150.1	150.8	154.5	157.7	181.5	148.8	149.4	151.1	152.8	157.1
40	184.8	150.3	150.9	151.6	155.3	158.5	184.0	149.9	150.2	151.9	153.6	157.7
41	187.4	151.3	151.6	152.3	156.0	159.0	186.4	150.9	151.0	152.7	154.4	158.5
42	190.0	152.1	152.2	153.1	156.6	159.7	188.8	151.5	151.7	153.5	155.1	159.1
43	192.5	152.7	152.8	153.9	157.3	160.3	191.3	152.3	152.4	154.2	155.8	159.7
44	194.9	153.9	153.8	154.6	158.0	160.9	194.0	153.3	152.9	154.7	156.5	160.1
45	197.2	154.9	154.3	155.3	158.6	161.3	196.6	154.8	153.6	155.5	157.1	160.8
46	199.5	156.1	155.1	156.1	159.2	162.0	199.0	155.5	154.3	156.3	157.7	161.2
47	201.9	157.6	155.9	156.8	159.8	162.3	201.4	155.9	154.8	157.2	158.2	161.8
48	204.5	159.6	156.6	157.5	160.4	162.9	203.7	158.5	155.5	158.1	158.7	162.3
49	207.1	162.7	157.3	158.0	160.9	163.2	206.3	162.3	156.4	158.7	159.3	162.8
50	209.7	167.2	157.8	158.4	161.6	163.7	209.2	166.6	156.8	159.0	159.9	163.2
51	212.0	172.3	158.2	159.1	162.1	164.3	211.8	173.2	157.5	159.2	160.5	163.6
52	214.4	178.7	158.6	159.7	162.5	164.6	214.1	182.1	158.9	159.5	161.0	164.1
53	216.9	186.0	160.6	160.3	162.8	165.1	216.6	190.6	160.3	159.8	161.5	164.6
54	219.2	193.3	161.7	161.0	163.4	165.4	219.2	197.7	161.8	160.6	162.0	165.0

ASTM Class	A	A	A	A	A	A	B	B	B	B	B	B
State	WV	WV	WV	WV	WV	WV	NE	NE	NE	NE	NE	NE
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839073	839369	839370	839371	839372	839373	895211	895212	895213	895214	895215	895216
Date	11/4/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09
Distillation, D86 (^{o}F)												
55	221.6	199.5	166.0	161.4	163.8	165.8	221.8	203.6	165.9	161.3	162.4	165.3
56	224.1	205.1	173.4	161.8	164.3	166.2	224.1	209.2	174.8	161.4	162.9	165.7
57	226.6	209.9	184.1	162.7	164.9	166.5	226.7	213.3	187.5	162.3	163.2	166.1
58	229.0	214.2	195.5	164.2	165.2	166.9	229.5	217.9	198.6	164.1	163.4	166.4
59	231.2	218.1	203.8	167.3	165.5	167.1	232.2	221.2	207.1	167.2	163.9	166.8
60	233.4	221.6	210.9	174.4	166.1	167.5	235.1	224.7	213.8	175.1	164.5	167.0
61	235.8	224.5	217.8	187.2	166.9	167.8	237.8	227.8	219.0	193.6	164.9	167.4
62	238.3	226.9	222.9	201.8	167.3	168.0	240.3	231.1	223.2	209.6	164.8	167.7
63	240.9	229.8	227.4	213.0	167.5	168.3	242.8	234.5	227.7	219.8	165.5	167.9
64	243.6	232.7	230.3	220.2	168.0	168.8	245.5	237.5	231.8	224.6	165.9	168.3
65	246.1	235.3	233.1	225.6	168.9	169.0	248.5	240.2	234.9	230.1	165.5	168.5
66	248.6	237.5	236.3	230.3	169.6	169.2	251.6	243.2	238.4	234.6	165.1	168.8
67	251.1	238.4	238.8	234.5	174.6	169.5	254.3	245.8	241.8	238.2	168.1	169.0
68	253.4	240.4	241.8	238.1	193.1	169.9	256.7	248.5	245.1	241.7	190.1	169.4
69	255.7	243.5	244.1	241.5	217.0	170.2	259.5	250.3	248.1	245.3	216.0	169.8
70	258.1	246.7	245.3	244.7	228.5	170.3	263.1	253.6	250.5	249.3	229.7	170.2
71	260.6	250.5	247.1	247.9	235.7	170.8	266.6	257.4	253.6	252.4	237.0	170.6
72	263.1	253.9	251.3	250.9	241.7	170.9	270.1	261.1	256.6	255.5	242.9	171.0
73	265.7	257.0	255.0	253.6	246.0	171.6	273.8	264.4	259.0	259.5	248.5	171.3
74	268.5	259.4	258.3	256.2	249.6	171.6	277.4	267.9	261.9	263.5	253.9	171.5
75	271.3	262.1	261.5	258.4	253.0	172.1	281.2	272.1	266.4	267.0	259.0	172.6
76	274.1	265.7	263.5	260.9	256.5	173.0	285.0	276.3	271.4	270.0	263.3	172.2
77	277.2	269.4	264.6	263.7	259.8	173.9	288.8	279.9	276.1	274.0	267.6	173.3
78	280.5	272.8	268.0	265.7	263.2	185.3	293.0	284.6	280.1	278.9	272.2	202.3
79	283.5	276.0	272.9	268.6	267.4	247.4	297.5	289.3	284.6	283.7	277.1	251.2
80	286.7	279.0	276.9	273.3	272.0	255.1	301.7	294.1	289.9	287.2	281.7	260.9
81	290.0	282.1	280.5	278.1	276.0	260.8	305.2	298.6	294.9	292.0	286.0	267.6
82	292.9	285.8	283.8	282.0	279.8	265.8	309.1	303.5	299.4	298.1	290.1	275.4
83	295.9	289.7	287.1	285.7	283.6	270.8	313.3	307.9	304.4	303.7	295.1	283.4
84	299.2	293.3	291.1	289.6	287.3	276.1	317.1	310.6	309.3	308.6	301.6	290.7
85	302.1	296.7	294.5	293.1	290.7	280.2	320.0	315.4	313.5	312.7	307.4	298.1
86	305.1	300.3	298.4	296.2	293.9	285.4	321.9	318.7	318.2	317.4	311.9	304.6
87	309.0	304.2	301.8	299.8	297.7	290.1	324.8	320.2	321.7	321.6	316.2	310.4
88	312.9	307.9	305.7	302.9	302.0	293.8	327.9	324.8	322.4	324.2	320.0	315.0
89	316.6	311.3	309.7	305.3	306.1	298.5	330.4	328.5	326.7	324.9	322.5	320.2
90	320.1	314.2	313.3	309.4	310.4	303.6	332.9	331.7	330.5	328.7	325.5	324.1
91	323.6	317.8	315.3	314.8	315.7	308.7	334.9	334.1	333.3	331.9	329.6	327.4
92	327.5	322.2	320.9	319.6	320.1	312.9	336.8	336.3	335.6	334.6	333.1	328.6
93	331.2	326.5	326.5	324.4	324.9	318.5	339.1	338.5	337.7	337.2	335.9	332.7
94	335.5	331.2	332.0	329.4	330.1	323.8	341.9	340.9	340.1	340.0	338.3	336.1
95	340.5	335.8	336.7	334.5	335.3	330.6	345.2	343.9	342.7	342.6	340.2	339.3
96	346.2	341.8	342.6	339.5	341.2	335.2	349.6	348.0	346.0	342.4	342.0	342.1
97	354.5	349.2	348.8	346.3	349.5	343.4	358.7	354.9	353.9	351.1	348.4	347.0
98	369.1	360.7	359.3	360.0	362.0	356.9	373.6		368.5	369.3	364.5	358.7
99												
FBP	378.4	374.3	371.9	373.3	372.5	366.3	384.5	383.0	378.0	380.1	376.2	375.5
Recovered (%)	97.8	97.7	98.2	97.9	98.5	98.1	98.0	98.3	97.9	98.0	98.0	98.4
Residue (%)	1.0	0.8	0.9	0.8	0.9	1.0	0.8	0.9	0.9	1	0.8	0.8
Loss (%)	1.2	1.5	0.9	1.3	0.6	0.9	1.2	0.8	1.2	1	1.2	0.8
$T_{V/L=20}$ (^{o}F)	144.6	126.8	126.4	127.2	128.0	129.8	142.50	126.40	128.90	126.70	130.20	131.70
RON												
MON												
(R+M)/2												

ASTM Class	B	B	B	B	B	B	B	B	B	B	B	B
State	NE	NE	NE	NE	NE	NE	SD	SD	SD	SD	SD	SD
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	895205	895206	895207	895208	895209	895210	895229	895230	895231	895232	895233	895234
Date	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09
Dry Vapor Pressure Equivalent (psi)	9.47	10.28	10.22	10.30	10.17	9.92	8.87	9.69	9.60	9.54	9.39	9.06
Specific Gravity	0.7406	0.7451	0.7462	0.7474	0.75	0.7551	0.7405	0.745	0.7461	0.7474	0.7498	0.755
Ethanol (Vol%)	0.00	10.73	12.45	15.07	20.16	29.82	0.00	10.40	12.26	14.40	18.14	29.25
Ethanol (Wt%)	0.00	11.43	13.25	16.01	21.34	31.35	0.00	11.08	13.04	15.30	19.20	30.76
Distillation, D86 (^{o}F)												
IBP	86.0	90.9	93.4	91.9	91.4	93.5	86.6	92.6	94.3	94.1	95.2	100.4
1	93.6	95.9	99.8	96.8	98.1	98.8	92.6	94.9	100.6	100.2	102.7	106.4
2	100.5	100.9	106.2	101.7	104.9	104.1	98.6	107.5	106.9	106.3	110.2	112.4
3	105.6	105.4	109.2	106.0	108.9	108.9	104.6	113.9	112.8	112.1	115.8	117.9
4	109.1	108.7	111.4	109.3	111.6	112.2	110.5	117.1	116.9	116.0	119.6	121.9
5	111.9	111.0	113.5	111.6	113.6	114.7	115.7	120.0	119.6	119.3	122.3	125.1
6	114.5	112.7	115.2	113.4	115.5	116.9	119.6	122.5	122.1	122.2	124.9	127.5
7	116.9	114.3	116.7	115.2	117.3	118.8	123.8	124.5	124.2	124.5	127.1	130.1
8	118.9	115.8	117.9	116.8	118.8	120.6	127.3	126.4	126.5	126.6	129.3	132.1
9	120.9	117.3	119.3	118.2	120.4	122.4	130.7	128.3	128.6	128.8	131.7	134.3
10	122.7	118.7	120.6	119.7	121.9	123.9	134.1	130.1	130.5	130.7	133.6	136.5
11	124.4	119.9	121.5	120.9	122.9	125.4	137.5	131.8	132.2	132.7	135.4	138.2
12	126.1	121.1	122.7	122.1	124.1	126.8	140.9	133.5	133.8	134.2	137.0	140.0
13	127.9	122.1	123.9	123.5	125.2	128.2	144.1	134.9	135.4	135.8	138.5	141.7
14	129.6	123.2	125.0	124.6	126.4	129.3	147.5	136.4	136.9	137.5	140.1	143.0
15	131.3	124.3	125.6	125.5	127.8	130.9	150.6	138.0	138.2	139.0	141.8	144.5
16	133.0	125.2	126.8	126.5	129.0	132.2	153.5	139.2	139.7	140.6	143.2	146.1
17	134.7	126.0	128.1	127.8	130.4	133.6	156.4	140.8	141.1	142.1	144.5	147.4
18	136.4	127.0	129.1	129.0	131.6	135.0	159.4	142.2	142.5	143.3	145.7	148.6
19	138.1	128.3	130.0	130.1	132.7	136.1	162.3	143.3	143.6	144.3	147.0	149.6
20	139.9	129.3	131.1	131.3	133.6	137.2	165.4	144.6	144.8	145.6	148.2	150.7
21	141.8	130.5	132.1	132.5	134.7	138.4	168.3	145.9	145.9	146.7	149.3	151.6
22	143.6	131.6	133.3	133.5	135.7	139.4	171.3	146.9	146.9	147.8	150.1	152.2
23	145.3	132.5	134.4	134.5	137.0	140.9	174.0	147.9	148.2	148.8	150.8	153.1
24	147.2	133.4	135.3	135.6	138.1	142.2	176.5	148.8	149.3	149.8	151.8	154.2
25	149.1	134.5	136.4	136.7	139.3	143.3	179.1	149.5	150.1	150.9	152.7	155.0
26	150.8	135.5	137.4	137.7	140.4	144.3	181.7	150.5	151.1	151.7	153.4	155.8
27	152.4	136.5	138.5	138.7	141.5	145.3	184.2	151.4	151.9	152.4	154.1	156.6
28	154.2	137.6	139.3	139.6	142.5	146.5	186.6	152.2	152.7	152.9	155.0	157.1
29	155.9	138.6	140.4	140.5	143.3	147.7	189.0	152.8	153.5	153.7	155.6	157.6
30	157.7	139.3	141.4	141.6	144.4	148.6	191.3	153.6	154.2	154.4	156.2	158.1
31	159.9	140.4	142.4	142.6	145.3	149.7	193.4	154.2	154.8	155.0	156.7	158.6
32	162.0	141.4	143.2	143.6	146.1	150.6	195.4	155.0	155.4	155.5	157.2	159.2
33	163.9	142.3	144.3	144.5	147.2	151.5	197.4	155.7	156.2	156.3	157.7	159.7
34	166.0	143.2	145.2	145.5	148.1	152.5	198.9	156.0	156.8	156.7	158.3	160.2
35	168.1	144.2	145.9	146.2	148.9	153.3	200.8	156.3	157.3	157.3	158.8	160.5
36	170.2	145.0	146.9	147.1	150.1	154.0	202.7	156.9	157.8	157.9	159.3	161.0
37	172.4	146.0	147.8	148.2	150.9	154.8	204.3	157.6	158.2	158.3	159.7	161.4
38	174.7	146.7	148.6	149.1	151.8	155.7	206.0	158.2	158.7	159.0	160.1	161.7
39	176.9	147.3	149.4	149.8	152.5	156.4	207.6	159.4	159.2	159.5	160.5	162.1
40	179.3	148.2	150.0	150.4	153.1	157.1	209.2	161.7	159.7	159.9	160.9	162.4
41	181.6	149.1	150.8	151.3	153.9	157.8	210.7	165.1	160.3	160.3	161.3	162.6
42	184.0	149.8	151.6	152.1	154.5	158.3	212.2	169.9	161.0	160.4	161.7	162.8
43	186.4	150.5	152.4	152.8	155.3	158.9	213.6	176.7	162.1	160.8	162.0	163.1
44	188.6	151.2	152.9	153.5	156.0	159.6	215.0	184.7	163.3	161.3	162.3	163.4
45	191.0	152.0	153.7	154.1	156.7	160.2	216.1	192.1	164.8	161.8	162.6	163.6
46	193.4	152.9	154.3	154.9	157.4	160.9	217.1	197.6	167.6	162.5	162.8	164.0
47	195.8	153.5	155.1	155.5	158.0	161.4	218.7	202.1	171.4	162.7	163.1	164.3
48	198.2	154.0	155.7	156.2	158.6	161.9	219.8	205.9	177.5	162.6	163.4	164.5
49	200.2	154.9	156.4	156.9	159.1	162.4	220.6	209.2	186.8	163.7	163.7	164.7
50	202.5	156.1	156.9	157.5	159.6	162.8	221.6	212.4	195.7	165.2	163.9	164.9
51	205.0	159.8	157.3	158.0	160.2	163.2	223.0	215.0	202.5	168.4	164.2	165.2
52	207.3	164.7	158.3	158.6	160.7	163.7	224.0	216.8	207.8	172.8	164.5	165.4
53	209.6	171.3	159.8	159.4	161.2	164.2	225.0	218.8	211.5	181.8	164.7	165.6
54	212.0	178.9	161.0	159.9	161.6	164.6	226.3	220.3	214.4	193.6	164.9	165.8

ASTM Class	B	B	B	B	B	B	B	B	B	B	B	B
State	NE	NE	NE	NE	NE	NE	SD	SD	SD	SD	SD	SD
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	895205	895206	895207	895208	895209	895210	895229	895230	895231	895232	895233	895234
Date	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09
Distillation, D86 (^{o}F)												
55	214.3	185.7	163.8	160.3	162.1	165.0	227.4	221.7	217.2	204.5	165.2	166.0
56	216.6	192.7	167.9	160.6	162.5	165.4	228.6	223.7	219.9	211.5	165.6	166.3
57	218.9	199.1	174.9	161.2	162.9	165.8	230.0	225.0	222.0	215.6	166.4	166.5
58	220.9	204.0	184.3	162.0	163.3	166.1	231.0	225.8	223.7	218.2	167.7	166.6
59	223.5	208.7	194.2	162.8	163.4	166.5	232.1	226.1	225.0	220.4	170.8	166.8
60	226.0	212.3	201.9	165.1	164.0	166.9	233.3	224.6	226.6	223.1	175.5	166.9
61	228.6	215.9	208.2	169.5	164.8	167.2	234.4	225.9	228.5	225.7	186.7	167.2
62	231.1	219.4	214.2	179.1	165.5	167.4	235.2	228.8	230.2	227.6	203.1	167.4
63	233.3	222.7	219.4	193.9	166.3	167.7	236.5	232.2	231.7	229.5	214.9	167.5
64	235.9	225.9	222.8	206.6	166.5	168.0	238.0	234.9	233.0	231.0	220.7	167.8
65	238.5	228.7	225.7	215.2	167.0	168.2	239.6	236.7	234.1	232.5	224.7	168.0
66	240.8	231.5	228.7	221.3	168.4	168.7	241.1	237.9	234.8	233.0	227.9	168.2
67	243.1	234.2	232.7	226.0	168.9	169.0	242.7	239.5	235.6	234.6	230.4	168.3
68	246.1	236.9	236.6	230.5	170.2	169.2	244.1	241.1	236.7	237.0	232.9	168.5
69	248.8	239.4	240.2	234.4	187.2	169.4	245.6	242.4	238.6	238.9	235.5	169.0
70	251.4	242.0	242.9	237.7	214.7	169.8	247.1	243.0	238.5	240.2	237.8	169.3
71	254.3	244.8	245.2	240.8	228.0	170.0	248.9	244.3	238.4	239.4	240.0	169.4
72	257.4	247.7	248.0	243.7	234.8	170.3	251.1	246.1	241.7	239.4	242.5	169.8
73	260.7	250.8	251.0	246.5	239.4	170.5	253.2	248.0	245.3	242.7	244.7	170.0
74	264.1	253.9	253.8	249.5	242.9	171.0	255.1	250.2	248.7	246.2	246.3	173.6
75	267.6	256.7	257.0	253.1	246.7	171.4	257.2	252.6	251.2	249.3	248.1	197.0
76	270.7	259.7	260.2	257.0	250.2	172.0	259.5	255.2	253.4	251.6	249.6	231.7
77	274.1	263.6	263.3	260.5	254.2	172.4	261.7	257.9	255.6	252.9	250.8	237.4
78	277.9	267.6	266.8	263.3	258.2	177.7	264.4	260.4	257.7	252.9	253.1	242.1
79	281.9	271.1	270.7	266.3	262.4	206.3	267.5	263.0	260.0	255.0	255.8	246.0
80	285.8	274.8	274.6	270.5	267.2	246.5	270.6	265.9	262.6	259.4	257.1	249.7
81	289.4	278.8	278.2	275.3	271.1	254.0	273.7	268.9	265.6	263.8	259.0	253.2
82	293.5	283.0	281.8	279.8	275.5	259.7	277.5	272.4	269.0	267.9	262.9	257.0
83	298.0	287.3	286.4	283.5	280.3	265.7	281.4	275.8	272.4	271.8	267.8	260.1
84	302.9	291.2	291.1	288.2	284.3	270.6	285.3	280.3	275.8	275.2	272.1	263.2
85	307.4	295.5	295.5	294.0	287.4	275.9	289.3	284.4	279.9	279.1	276.1	266.8
86	312.2	301.3	301.5	299.3	294.0	282.6	293.8	288.2	284.6	283.2	281.0	271.4
87	316.5	306.8	308.5	304.6	301.9	288.8	298.5	292.8	289.6	288.0	286.0	276.4
88	320.4	312.0	314.4	310.5	308.5	295.2	302.6	298.1	294.5	293.2	291.0	281.9
89	325.9	316.2	318.7	316.0	313.1	302.1	307.4	303.9	299.1	298.4	295.9	287.8
90	332.3	324.9	326.3	319.2	317.6	309.5	308.3	310.2	304.6	304.8	301.6	293.4
91	337.9	332.2	333.2	325.2	324.9	317.8	317.1	316.2	309.4	310.9	308.0	300.5
92	343.4	338.4	339.7	334.4	333.6	325.4	321.8	320.8	314.7	316.7	315.0	308.1
93	349.5	344.1	345.0	342.1	340.8	332.8	331.7	328.1	322.6	324.1	323.3	317.2
94	355.6	348.5	351.2	348.4	346.9	339.9	339.5	336.7	331.4	332.6	331.6	326.0
95	361.8	353.3	357.3	353.4	352.9	347.0	346.8	345.9	339.5	341.0	338.1	334.5
96	370.0	362.9	365.1	361.8	358.8	355.7	355.3	356.3	348.3	349.7	346.3	342.9
97	381.6	376.2	377.4	374.6	370.0	366.0	368.4	368.8	358.3	360.4	360.4	356.8
98	395.4	391.2	394.1	390.4	389.7	381.6	386.7	385.6	372.6	375.0	378.8	
99												
FBP	406.8	402.3	400.9	399.1	399.4	393.7	402.1	390.1	389.3	388.5	391.2	385.5
Recovered (%)	98.4	97.8	98.1	97.9	98.2	97.7	97.5	98.4	98.0	97.6	97.9	97.5
Residue (%)	1	0.8	0.9	0.8	0.8	0.9	0.9	1.3	0.6	0.9	0.9	1
Loss (%)	0.6	1.4	1	1.3	1	1.4	1.6	0.3	1.4	1.5	1.2	1.5
$T_{V/L=20}$ (^{o}F)	139.90	125.20	123.50	125.80	124.60	129.10	152.90	131.40	135.00	133.20	132.00	137.40
RON												
MON												
(R+M)/2												

ASTM Class	B	B	B	B	B	B	B	B	B	B	B	B
State	SD	SD	SD	SD	SD	SD	UT	UT	UT	UT	UT	UT
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	895223	895224	895225	895226	895227	895228	895235	895236	895237	895239	n/a	893886
Date	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09	11/9/09	12/2/09	12/2/09	12/2/09	12/2/09	12/2/09
Dry Vapor Pressure Equivalent (psi)	9.32	10.24	10.08	10.04	10.18	9.57	10.33	10.91	10.71	10.80	n/a	10.28
Specific Gravity	0.7362	0.741	0.7413	0.7339	0.7465	0.7522	0.7353	0.7406	0.7421	0.7435	n/a	0.7523
Ethanol (Vol%)	0.00	10.35	12.69	15.13	18.28	29.37	0.00	10.11	12.58	15.50	n/a	30.52
Ethanol (Wt%)	0.00	11.09	13.59	16.36	19.44	31.00	0.00	10.84	13.46	16.55	n/a	32.21
Distillation, D86 (^{o}F)												
IBP	83.8	93.8	90.9	92.9	95.0	96.4	84.4	87.6	88.6	88.4	n/a	91.2
1	89.7	99.9	96.8	99.6	100.4	103.8	89.0	93.6	94.6	93.8	n/a	97.6
2	95.6	106.0	102.6	105.9	105.8	110.9	93.5	99.6	100.6	99.3	n/a	104.1
3	101.5	109.8	107.7	109.7	110.5	114.5	98.1	105.6	106.4	104.8	n/a	110.3
4	107.5	112.2	110.8	112.9	113.5	117.0	103.4	109.5	110.4	109.2	n/a	114.9
5	111.3	114.3	113.0	114.8	115.7	119.2	108.5	112.4	113.7	113.1	n/a	118.3
6	114.3	116.2	115.2	116.7	117.7	121.0	112.7	115.7	116.6	116.6	n/a	121.3
7	117.1	117.7	117.1	118.4	119.5	122.7	116.4	118.2	119.0	119.4	n/a	124.6
8	119.4	119.3	118.8	119.9	121.2	124.6	119.8	120.4	121.4	121.9	n/a	127.3
9	121.3	120.8	120.3	121.6	122.7	126.2	122.8	122.9	124.0	124.2	n/a	129.9
10	123.5	122.2	121.6	122.7	124.2	127.6	126.1	124.8	126.0	126.4	n/a	132.4
11	125.5	123.1	122.9	124.0	125.4	129.0	129.4	126.8	127.9	128.7	n/a	134.9
12	127.5	124.3	124.1	125.1	126.6	130.4	132.6	128.9	130.1	130.8	n/a	137.0
13	129.3	125.3	125.3	126.4	127.9	131.7	135.7	130.7	131.8	132.8	n/a	138.9
14	130.9	126.4	126.5	127.6	129.2	132.6	139.0	132.5	133.7	134.5	n/a	140.7
15	133.2	127.5	127.6	128.6	130.4	133.6	142.6	134.2	135.5	136.4	n/a	142.8
16	134.9	128.5	128.6	129.6	131.6	134.9	146.2	136.1	137.3	138.2	n/a	144.6
17	136.7	129.7	129.6	130.8	132.6	136.4	149.4	138.1	139.3	139.9	n/a	146.0
18	138.7	130.8	130.7	132.2	133.6	137.5	152.5	139.6	140.8	141.4	n/a	147.6
19	140.8	131.8	132.0	133.2	135.0	139.0	155.9	141.3	142.4	143.0	n/a	149.0
20	142.4	132.8	133.0	134.3	136.2	140.2	159.3	142.7	143.7	144.5	n/a	150.3
21	144.2	133.8	133.9	135.4	137.3	140.9	162.5	144.2	145.2	145.8	n/a	151.3
22	146.1	134.6	134.9	136.4	138.4	142.4	165.9	145.7	146.5	147.1	n/a	152.4
23	148.3	135.9	135.8	137.4	139.6	143.5	169.1	147.1	148.0	148.2	n/a	153.3
24	150.0	136.7	136.7	138.4	140.7	144.5	172.3	148.2	149.1	149.3	n/a	154.3
25	152.1	137.6	137.8	139.5	141.6	145.4	175.5	149.5	149.9	150.3	n/a	155.1
26	153.9	138.5	139.0	140.4	142.6	146.4	178.4	150.6	151.0	151.4	n/a	156.0
27	155.6	139.6	140.0	141.3	143.6	147.5	181.3	151.7	151.8	152.3	n/a	156.7
28	157.6	140.4	140.6	142.1	144.5	148.3	184.2	152.5	152.6	153.1	n/a	157.5
29	159.4	141.3	141.4	143.2	145.4	149.3	187.0	153.5	153.3	154.0	n/a	158.1
30	161.4	142.3	142.4	144.0	146.3	150.2	189.6	154.4	153.6	154.7	n/a	158.6
31	163.3	143.0	143.3	145.0	146.8	150.9	192.0	155.2	154.8	155.5	n/a	159.2
32	165.3	143.8	144.1	145.7	147.6	152.1	194.2	156.0	155.6	156.4	n/a	159.6
33	167.4	144.8	145.0	146.5	148.6	152.7	196.4	157.0	156.2	157.0	n/a	160.2
34	169.3	145.6	145.9	147.4	149.5	153.5	198.7	157.6	156.9	157.5	n/a	160.6
35	171.4	146.2	146.8	148.5	150.3	154.6	200.7	158.1	157.6	158.1	n/a	160.9
36	173.6	147.2	147.6	149.3	150.9	155.3	202.6	159.2	158.5	158.6	n/a	161.3
37	175.7	147.9	148.2	150.0	151.7	156.0	204.3	160.5	158.7	159.1	n/a	161.8
38	177.8	148.5	149.1	150.9	152.4	156.7	205.8	161.3	158.9	159.7	n/a	162.1
39	179.9	149.2	149.9	151.6	153.1	157.1	207.3	162.8	159.8	160.1	n/a	162.3
40	181.4	150.1	150.6	152.4	153.9	157.9	208.6	165.6	160.7	160.5	n/a	162.6
41	183.6	150.6	151.4	152.9	154.6	158.4	210.2	167.9	161.7	161.1	n/a	162.9
42	185.6	151.3	152.1	153.7	155.2	159.0	211.7	170.8	162.7	161.5	n/a	163.3
43	188.0	151.8	152.7	154.5	155.8	159.6	213.1	176.8	163.5	161.7	n/a	163.6
44	190.3	152.4	153.2	155.0	156.4	160.0	214.3	184.1	163.3	162.0	n/a	163.8
45	192.7	152.9	153.8	155.8	157.1	160.6	215.2	191.2	164.8	162.3	n/a	164.0
46	194.6	153.6	154.6	156.4	157.8	161.2	216.4	197.3	165.7	162.8	n/a	164.3
47	196.8	155.2	155.4	157.1	158.4	161.7	217.6	202.6	168.8	163.3	n/a	164.5
48	199.1	157.3	155.9	157.6	158.9	162.3	218.8	207.2	173.1	163.8	n/a	164.7
49	201.3	160.3	156.3	158.2	159.4	162.7	219.8	210.5	178.7	163.6	n/a	164.9
50	203.8	164.7	156.8	158.9	159.9	163.0	220.9	213.2	187.5	164.6	n/a	165.1
51	205.9	170.3	157.6	159.7	160.5	163.4	221.9	215.8	196.6	166.8	n/a	165.2
52	207.9	176.9	158.5	160.4	161.1	163.8	222.9	217.5	204.3	170.4	n/a	165.4
53	210.4	183.4	159.7	160.8	161.6	164.2	223.8	219.3	209.9	175.7	n/a	165.5
54	212.8	190.1	161.8	161.4	162.0	164.5	224.8	220.6	213.1	184.7	n/a	165.7

ASTM Class	B	B	B	B	B	B	B	B	B	B	B	B
State	SD	SD	SD	SD	SD	SD	UT	UT	UT	UT	UT	UT
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	895223	895224	895225	895226	895227	895228	895235	895236	895237	895239	n/a	893886
Date	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09	11/9/09	12/2/09	12/2/09	12/2/09	12/2/09	12/2/09
Distillation, D86 (^{o}F)												
55	215.0	196.2	165.2	161.8	162.4	164.7	225.8	221.5	215.4	195.4	n/a	166.1
56	217.2	201.7	170.6	162.3	162.9	165.3	226.8	222.7	218.8	204.6	n/a	166.3
57	219.5	205.9	179.0	163.0	163.3	165.9	228.0	223.7	221.1	211.0	n/a	166.6
58	221.3	209.1	189.1	164.7	163.8	166.3	229.1	224.6	223.2	215.1	n/a	166.7
59	223.3	213.4	198.2	166.9	164.2	166.6	230.0	225.2	224.6	218.5	n/a	166.7
60	225.5	216.2	205.0	170.8	164.8	166.9	230.9	226.7	225.9	221.3	n/a	167.1
61	227.9	219.2	210.4	180.3	165.2	167.3	231.7	228.0	227.5	223.9	n/a	167.3
62	230.4	222.2	214.5	195.2	165.5	167.4	232.6	229.1	228.8	226.2	n/a	167.4
63	232.7	224.7	218.3	206.9	165.8	167.8	233.9	230.3	229.2	228.3	n/a	167.5
64	235.4	226.7	222.2	215.8	166.2	168.2	235.0	231.2	229.9	229.6	n/a	167.7
65	237.6	229.1	226.0	220.6	166.9	168.3	235.9	232.9	231.0	230.8	n/a	168.0
66	239.9	232.4	229.2	225.6	168.1	168.7	237.0	234.2	232.3	232.0	n/a	168.2
67	241.9	235.0	232.0	229.1	168.4	169.2	238.4	235.6	232.6	233.1	n/a	168.3
68	244.2	237.3	234.4	232.5	174.2	169.3	239.7	237.0	233.7	234.3	n/a	168.6
69	246.8	239.3	237.0	235.4	198.1	169.5	240.8	237.8	233.7	235.4	n/a	168.9
70	249.3	242.1	239.6	238.4	220.7	170.0	242.0	238.4	236.1	236.3	n/a	169.2
71	252.2	244.6	241.9	241.4	230.6	170.4	243.2	239.3	239.1	237.4	n/a	169.5
72	255.0	247.0	244.3	243.8	235.6	170.5	244.6	240.5	241.1	238.6	n/a	169.8
73	257.0	249.9	246.7	245.5	239.3	171.0	246.2	242.9	242.2	240.0	n/a	170.1
74	259.8	252.8	248.9	247.9	242.8	171.4	247.9	245.6	242.4	241.1	n/a	170.9
75	262.5	255.6	252.1	250.7	246.4	172.1	249.8	247.3	243.6	242.7	n/a	171.8
76	265.1	258.8	255.0	253.3	249.8	172.6	251.7	248.9	246.7	244.6	n/a	176.6
77	267.6	261.3	257.7	256.5	253.0	172.9	253.6	250.8	249.1	246.7	n/a	200.2
78	270.4	264.3	261.4	260.6	256.3	179.1	255.6	252.4	251.3	249.1	n/a	227.8
79	273.0	267.7	264.9	264.0	259.8	226.1	257.5	254.3	253.1	251.6	n/a	237.2
80	276.3	271.2	268.2	266.8	263.2	247.9	259.6	256.0	255.1	253.9	n/a	240.9
81	279.7	274.3	271.0	270.0	264.9	253.6	261.9	258.5	257.4	255.9	n/a	244.4
82	283.2	277.7	274.0	274.3	267.8	257.9	264.4	260.7	259.6	257.9	n/a	247.8
83	286.5	280.9	277.2	278.1	272.6	262.6	266.9	263.6	261.5	260.3	n/a	251.1
84	289.6	284.3	281.2	281.5	276.8	267.6	269.6	266.4	264.1	262.9	n/a	254.2
85	292.8	287.9	285.1	284.8	279.9	272.4	272.4	269.4	267.2	266.0	n/a	256.9
86	296.5	291.1	289.1	288.6	283.9	276.5	275.5	272.6	270.6	268.9	n/a	259.9
87	300.6	295.9	293.5	292.7	289.1	281.0	279.2	275.6	274.7	272.6	n/a	262.9
88	303.9	301.0	297.3	296.7	294.3	285.7	282.7	279.5	278.5	276.5	n/a	266.6
89	308.0	305.5	301.5	301.6	299.0	290.8	286.1	283.6	282.3	280.4	n/a	270.9
90	308.5	310.7	305.3	307.0	302.5	297.5	290.5	288.0	286.5	284.4	n/a	276.0
91	316.2	313.7	308.9	310.9	307.3	303.9	295.2	292.7	289.2	289.0	n/a	280.8
92	322.9	319.9	316.2	315.7	314.4	309.9	298.8	297.2	292.1	294.0	n/a	285.4
93	331.4	328.9	325.5	321.9	322.7	316.7	302.6	302.6	299.8	298.5	n/a	291.2
94	340.2	337.7	334.3	331.5	329.3	324.3	308.6	307.6	306.6	303.7	n/a	297.5
95	350.6	347.0	343.1	341.8	338.2	332.9	316.5	313.6	312.6	310.5	n/a	304.5
96	359.9	358.5	354.6	352.1	350.8	345.5	325.0	321.4	317.2	318.5	n/a	311.2
97	374.8	375.1	369.6	365.2	367.9	362.6	334.6	332.3	327.5	328.6	n/a	320.9
98		393.3			381.4		349.4	345.6	341.9	342.0	n/a	336.1
99												
FBP	408.5	396.8	389.7	391.6	391.1	387.7	362.3	355.7	357.0	353.4	n/a	349.8
Recovered (%)	97.2	97.6	97.2	97.9	97.3	98.0	97.3	97.4	97.7	97.4	n/a	97.7
Residue (%)	1.3	1.4	1.4	1.3	1.5	1.2	0.8	0.9	0.7	0.7	n/a	0.9
Loss (%)	1.5	1	1.4	0.8	1.2	0.8	1.9	1.7	1.6	1.9	n/a	1.5
$T_{V/L=20}$ (^{o}F)	140.90	124.90	127.70	127.80	128.30	128.10	141.00	128.30	126.10	129.10	n/a	130.95
RON												
MON												
(R+M)/2												

ASTM Class	B	B	B	B	B	B	B	B	B	B	B	B
State	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	895247	895248	895249	895250	895251	895252	895241	893887	n/a	895244	895245	895246
Date	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09	11/9/09	12/2/09	12/2/09	12/2/09	12/2/09	12/2/09
Dry Vapor Pressure Equivalent (psi)	9.22	10.05	10.00	9.94	9.90	9.53	11.02	11.62	n/a	11.51	11.34	10.96
Specific Gravity	0.7416	0.7461	0.7473	0.7485	0.751	0.7561	0.7137	0.7210	n/a	0.7246	0.7287	0.7366
Ethanol (Vol%)	0.00	10.31	12.61	14.45	18.31	29.36	0.00	10.27	n/a	14.48	20.29	29.87
Ethanol (Wt%)	0.00	10.97	13.40	15.32	19.35	30.82	0.00	11.31	n/a	15.86	22.11	32.20
Distillation, D86 (^{o}F)												
IBP	86.8	92.4	92.2	94.1	97.1	95.6	86.8	85.0	n/a	86.1	88.2	90.2
1	93.4	98.9	97.9	99.7	101.8	102.3	92.1	90.5	n/a	91.4	93.6	96.0
2	100.0	105.3	103.5	105.3	106.4	109.1	97.5	95.9	n/a	96.6	99.1	101.9
3	106.6	110.9	109.1	110.9	111.1	115.3	102.1	100.7	n/a	101.7	103.7	106.7
4	112.3	114.4	113.6	115.4	115.4	119.6	105.7	104.0	n/a	104.8	106.9	109.8
5	117.1	117.4	116.6	118.6	119.2	123.0	108.4	106.4	n/a	107.5	109.2	112.3
6	120.5	120.1	120.1	121.1	122.2	125.9	110.8	108.4	n/a	109.6	111.5	114.5
7	124.7	122.8	122.3	123.9	124.6	128.7	113.1	110.3	n/a	111.5	113.4	116.6
8	128.0	124.9	124.7	126.2	126.8	131.2	115.2	112.1	n/a	113.1	115.0	118.7
9	131.3	126.9	127.0	128.0	129.0	133.3	117.2	113.6	n/a	114.9	116.7	120.6
10	134.4	128.9	129.1	130.3	131.1	135.7	119.1	115.2	n/a	116.6	118.4	122.2
11	138.0	130.7	130.8	132.4	133.1	138.0	120.9	116.7	n/a	118.1	119.9	123.7
12	141.1	132.5	132.9	134.1	135.1	139.9	122.7	118.2	n/a	119.7	121.3	125.2
13	144.5	134.3	134.7	135.6	136.8	141.7	124.5	119.5	n/a	121.0	122.5	126.7
14	148.0	135.9	136.2	137.1	138.5	143.5	126.2	120.7	n/a	122.3	123.9	128.3
15	151.3	137.4	137.7	138.9	140.3	144.9	128.1	121.9	n/a	123.5	125.1	129.8
16	154.1	138.9	139.3	140.6	141.9	146.2	129.9	123.0	n/a	124.9	126.4	131.2
17	157.5	140.5	140.8	142.2	143.2	147.5	131.7	124.2	n/a	126.2	127.7	132.7
18	160.6	142.1	142.2	143.3	144.3	148.8	133.6	125.4	n/a	127.4	128.9	134.1
19	163.4	143.5	143.2	144.7	145.6	149.9	135.5	126.6	n/a	128.6	130.2	135.3
20	166.5	144.8	144.5	145.8	146.9	151.0	137.4	127.8	n/a	129.7	131.4	136.6
21	169.5	145.9	145.8	147.0	148.2	151.8	139.1	129.0	n/a	130.9	132.6	137.8
22	172.2	146.9	146.9	148.0	149.3	152.7	140.9	130.2	n/a	132.0	134.0	139.1
23	175.1	148.0	148.2	149.1	150.3	153.6	142.7	131.3	n/a	133.2	135.1	140.3
24	177.7	148.8	149.2	150.0	151.2	154.6	144.6	132.5	n/a	134.3	136.3	141.5
25	180.5	149.6	150.1	150.9	152.1	155.3	146.6	133.6	n/a	135.3	137.6	142.5
26	182.9	150.7	151.1	151.8	152.9	156.0	148.6	134.7	n/a	136.3	138.6	143.5
27	185.2	151.5	151.9	152.8	153.8	156.8	150.5	135.8	n/a	137.4	139.7	144.6
28	187.6	152.3	152.7	153.6	154.5	157.4	152.3	136.8	n/a	138.5	140.7	145.6
29	189.8	153.0	153.6	154.4	155.1	157.8	154.1	137.6	n/a	139.5	141.8	146.5
30	191.9	153.9	154.1	155.0	155.9	158.4	156.0	138.7	n/a	140.4	142.6	147.5
31	194.0	154.3	155.0	155.7	156.6	158.9	157.8	139.7	n/a	141.4	143.5	148.4
32	196.2	155.0	155.5	156.3	157.0	159.4	159.6	140.6	n/a	142.4	144.5	149.2
33	198.1	155.9	156.1	156.9	157.5	159.9	161.4	141.6	n/a	143.1	145.2	150.0
34	199.9	156.4	156.6	157.5	158.1	160.4	163.4	142.5	n/a	144.1	145.9	151.0
35	201.7	157.1	157.2	158.0	158.5	160.9	165.3	143.2	n/a	145.0	147.0	151.8
36	203.4	157.7	157.9	158.4	159.0	161.2	167.2	144.0	n/a	145.8	147.9	152.6
37	204.9	158.7	158.2	159.1	159.5	161.6	169.1	144.9	n/a	146.6	148.6	153.3
38	206.5	159.6	158.8	159.5	159.8	162.0	171.1	145.7	n/a	147.5	149.2	153.9
39	207.7	160.6	159.1	159.8	160.3	162.4	173.0	146.5	n/a	148.2	149.9	154.6
40	209.2	162.6	159.3	160.3	160.8	162.7	175.0	147.3	n/a	148.7	150.8	155.2
41	210.6	165.7	159.9	161.0	161.2	162.9	176.9	148.0	n/a	149.6	151.5	155.9
42	212.1	170.1	160.4	161.5	161.5	163.3	178.6	148.8	n/a	150.1	152.1	156.5
43	213.8	176.1	161.3	161.4	161.8	163.7	180.5	149.7	n/a	150.9	152.7	157.1
44	215.2	183.4	161.5	161.9	162.0	163.8	182.6	150.2	n/a	151.7	153.3	157.5
45	216.7	190.5	163.3	162.5	162.4	164.1	184.5	150.9	n/a	152.2	154.0	158.0
46	217.8	196.5	166.2	163.3	162.7	164.2	186.5	151.7	n/a	152.6	154.7	158.4
47	218.6	202.0	171.0	164.0	163.0	164.4	188.3	152.4	n/a	153.3	155.3	158.9
48	219.8	206.7	177.1	164.3	163.4	164.8	190.0	153.1	n/a	154.0	155.8	159.4
49	221.1	210.3	185.4	165.1	163.7	165.1	191.8	154.0	n/a	154.5	156.3	159.9
50	222.3	213.4	194.6	166.7	163.8	165.4	193.7	154.7	n/a	155.2	156.9	160.3
51	223.3	216.1	201.2	169.5	164.2	165.5	195.5	155.4	n/a	155.6	157.4	160.7
52	224.6	218.4	206.8	174.6	164.6	165.9	197.2	156.6	n/a	156.3	157.9	161.1
53	226.5	220.3	211.2	182.6	164.8	166.2	198.8	158.4	n/a	156.6	158.4	161.6
54	227.6	221.8	214.3	192.9	165.3	166.3	200.4	161.7	n/a	157.1	158.8	162.0

ASTM Class	B	B	B	B	B	B	B	B	B	B	B	B
State	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	895247	895248	895249	895250	895251	895252	895241	893887	n/a	895244	895245	895246
Date	10/21/09	11/5/09	11/5/09	11/5/09	11/5/09	11/5/09	11/9/09	12/2/09	12/2/09	12/2/09	12/2/09	12/2/09
Distillation, D86 (^{o}F)												
55	228.3	223.1	217.5	202.4	165.4	166.7	202.3	167.5	n/a	157.5	159.3	162.3
56	229.6	224.5	220.0	209.7	165.8	166.8	204.1	175.6	n/a	158.1	159.9	162.7
57	230.8	226.4	222.6	214.9	166.3	166.8	205.8	183.4	n/a	158.6	160.2	163.1
58	232.1	227.9	224.7	218.5	166.8	167.2	207.5	189.6	n/a	159.3	160.5	163.4
59	233.5	229.1	226.5	221.4	168.0	167.4	209.4	195.0	n/a	159.5	161.0	163.7
60	234.9	230.2	228.0	224.3	169.5	167.4	211.1	198.8	n/a	160.2	161.3	164.1
61	236.7	231.5	229.7	226.7	176.8	167.5	212.9	201.9	n/a	160.4	161.7	164.4
62	237.9	232.6	230.9	228.7	193.9	167.7	214.7	205.3	n/a	161.5	162.2	164.8
63	238.7	233.7	232.3	230.8	209.2	168.0	216.4	208.3	n/a	162.8	162.5	165.1
64	239.9	234.9	233.4	232.8	217.6	168.3	218.2	210.4	n/a	166.4	162.9	165.4
65	241.3	236.5	234.5	234.1	222.2	168.4	219.9	212.8	n/a	174.7	163.4	165.7
66	243.0	238.1	236.0	235.9	226.5	168.7	221.8	215.7	n/a	189.2	163.7	165.7
67	244.7	239.5	237.4	237.2	230.3	169.1	223.8	217.7	n/a	201.3	164.1	165.9
68	246.5	241.1	239.2	237.1	233.1	169.4	225.8	219.3	n/a	208.8	164.6	166.5
69	248.3	243.1	240.5	238.1	235.3	169.7	227.7	221.5	n/a	212.9	164.9	167.0
70	249.7	244.7	241.8	240.4	237.7	170.1	229.6	222.9	n/a	216.3	165.2	167.4
71	251.3	245.9	243.5	242.6	239.6	170.6	231.6	222.9	n/a	219.5	166.0	167.7
72	252.8	247.3	244.1	244.1	241.9	171.5	233.6	225.4	n/a	222.6	166.2	167.8
73	254.4	249.3	245.0	245.1	243.9	172.4	235.9	228.1	n/a	225.9	169.1	168.1
74	256.2	251.2	247.8	247.6	245.7	176.1	238.1	230.9	n/a	228.5	191.4	168.6
75	258.1	253.1	251.4	250.7	246.2	201.7	240.1	233.8	n/a	231.0	213.7	169.0
76	260.0	255.3	254.1	253.5	247.1	231.3	242.3	235.7	n/a	233.3	222.8	169.1
77	262.1	257.4	255.9	255.5	249.6	238.0	244.8	236.8	n/a	236.3	227.2	169.2
78	264.1	259.6	257.9	257.6	251.6	242.1	247.3	237.3	n/a	237.2	231.6	169.5
79	266.2	261.7	260.3	259.6	254.2	246.4	249.8	241.1	n/a	239.1	235.9	169.9
80	268.4	264.0	262.5	261.7	257.1	250.6	252.7	246.3	n/a	242.6	239.3	170.3
81	270.8	266.5	264.7	263.9	259.9	254.4	255.8	250.3	n/a	246.4	242.3	170.8
82	274.0	269.0	267.2	265.8	262.8	257.5	258.8	253.3	n/a	250.0	245.3	171.6
83	276.8	271.7	270.4	268.7	266.2	260.7	261.9	256.1	n/a	251.7	248.4	171.8
84	279.5	274.4	272.9	272.5	269.1	263.8	265.2	259.2	n/a	252.1	251.2	178.1
85	282.5	277.7	275.7	276.0	271.7	266.4	268.9	262.7	n/a	257.5	255.4	214.0
86	285.8	281.0	279.2	279.1	275.8	269.2	273.1	266.6	n/a	263.2	259.8	247.0
87	289.2	284.8	282.3	282.6	279.3	272.9	277.3	270.7	n/a	268.2	262.9	253.6
88	292.6	288.5	286.0	286.5	282.8	277.1	281.8	275.2	n/a	273.1	266.8	259.9
89	296.0	292.4	290.4	290.1	287.1	281.1	286.2	279.3	n/a	278.0	272.0	265.9
90	298.2	296.2	294.5	294.3	291.4	283.8	290.9	283.7	n/a	283.2	277.8	271.5
91	302.1	300.1	298.8	296.7	296.3	289.7	294.6	289.4	n/a	287.9	283.6	277.5
92	307.7	304.3	303.3	303.8	301.1	295.6	299.0	294.6	n/a	293.3	289.6	283.4
93	312.4	308.9	305.5	309.5	305.9	300.7	306.3	300.1	n/a	298.5	296.3	290.0
94	317.9	315.4	312.3	314.7	308.9	307.5	313.5	306.8	n/a	303.3	302.7	297.2
95	323.7	321.5	319.4	319.6	315.5	313.5	318.8	313.2	n/a	312.1	308.9	304.7
96	330.3	328.1	325.9	326.5	323.1	319.5	325.1	319.9	n/a	319.3	315.6	312.4
97	338.6	336.5	334.0	334.1	331.5	326.9	333.6	326.7	n/a	328.0	325.0	320.9
98	351.6	347.9	345.0	348.1	343.0	340.5	346.1		n/a	338.8	336.6	332.7
99												
FBP	369.3	360.1	357.9	360.1	355.6	353.5	358.8	348.8	n/a	349.8	346.4	343.0
Recovered (%)	97.8	97.6	97.6	97.4	97.3	97.7	98.0	97.9	n/a	97.7	98.1	98.0
Residue (%)	0.7	0.9	0.8	0.8	0.9	0.8	0.8	0.7	n/a	0.7	0.7	0.7
Loss (%)	1.5	1.5	1.6	1.8	1.8	1.5	1.2	1.5	n/a	1.6	1.2	1.3
$T_{V/L=20}$ (^{o}F)	151.20	129.70	132.90	130.30	130.80	136.00	127.90	119.50	n/a	121.40	122.40	122.60
RON												
MON												
(R+M)/2												

ASTM Class	C	C	C	C	C	C	C	C	C	C	C	C
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865541	865542	865543	865544	865545	865546	865535	865536	865537	865538	865539	865540
Date	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09	4/14/09	4/28/09	4/28/09	4/28/09	4/28/09	4/28/09
Dry Vapor Pressure Equivalent (psi)	10.61	11.33	11.14	11.05	11.04	10.57	11.05	11.76	11.81	11.56	11.47	11.13
Specific Gravity	0.7339	0.7426	0.7393	0.7405	0.7504	0.7489	0.7368	0.7412	0.7423	0.7437	0.7464	0.7520
Ethanol (Vol%)	0.00	10.14	12.71	14.94	20.99	29.91	0.00	9.85	12.26	14.73	19.64	30.65
Ethanol (Wt%)	0.00	10.84	13.65	16.02	22.20	31.70	0.00	10.55	13.11	15.73	20.89	32.35
Distillation, D86 (^{o}F)												
IBP	83.7	89.3	90.9	90.7	90.9	95.4	82.7	86.9	87.2	87.8	87.9	89.4
1	88.2	94.0	95.3	94.9	96.4	100.2	86.2	89.8	91.8	90.9	91.3	92.8
2	92.8	98.8	99.8	99.1	101.9	104.9	89.9	92.8	96.4	94.0	94.8	96.2
3	97.4	103.6	104.2	103.3	106.9	109.7	94.3	95.7	99.8	97.2	98.2	99.6
4	102.2	107.4	107.5	107.3	110.8	114.3	97.8	98.6	102.3	100.1	101.1	103.3
5	106.7	110.3	110.7	110.6	114.4	117.8	100.5	101.2	104.3	102.6	103.7	106.2
6	110.8	113.1	113.5	113.4	117.2	120.7	102.6	103.3	106.1	104.8	105.7	108.3
7	114.4	115.5	116.1	116.2	119.7	123.0	104.7	105.1	107.6	106.6	107.6	110.7
8	118.0	117.7	118.1	118.5	121.8	125.6	106.6	106.6	109.2	108.2	109.2	112.4
9	121.1	120.0	120.3	120.9	124.0	128.0	108.2	108.1	110.6	109.8	111.0	114.2
10	124.0	122.0	122.7	123.2	126.1	130.3	110.0	109.6	112.0	111.2	112.6	116.1
11	127.0	123.9	124.4	125.2	128.2	132.5	111.5	111.1	113.4	112.8	113.9	117.8
12	130.0	125.7	126.4	126.9	130.3	134.6	113.2	112.4	114.6	114.2	115.3	119.4
13	133.1	127.8	128.3	128.9	132.2	136.9	114.7	113.7	115.8	115.4	116.7	121.2
14	136.6	129.8	130.3	131.3	134.3	138.9	116.2	114.9	117.0	116.7	118.1	122.6
15	140.2	131.5	132.5	133.4	136.3	140.7	117.8	116.1	118.1	117.9	119.5	123.8
16	143.7	133.4	134.3	135.2	138.3	142.8	119.4	117.3	119.3	119.1	120.9	125.1
17	147.0	135.4	136.3	137.1	140.1	144.7	121.0	118.3	120.5	120.3	122.3	126.8
18	150.3	137.3	138.1	138.9	141.8	146.3	122.6	119.5	121.9	121.8	123.4	128.1
19	153.8	138.8	139.9	140.7	143.6	147.7	124.1	120.8	123.1	122.9	124.9	129.7
20	157.5	140.5	141.6	142.4	145.1	149.1	125.6	122.0	124.3	124.1	126.5	131.1
21	161.2	142.2	143.2	144.1	146.5	150.5	127.4	123.0	125.6	125.4	127.7	132.5
22	164.6	143.7	144.7	145.5	148.0	151.8	129.2	124.1	126.8	126.7	129.0	133.9
23	168.0	145.3	146.6	147.0	149.4	152.9	131.0	125.3	128.0	127.9	130.4	135.4
24	171.9	146.7	148.0	148.3	150.7	154.2	132.9	126.4	129.2	129.2	131.7	136.8
25	175.7	148.1	149.2	149.4	151.9	155.1	134.5	127.7	130.3	130.4	132.9	138.0
26	179.3	149.2	150.3	150.5	152.8	156.0	136.6	128.9	131.5	131.5	134.3	139.4
27	182.7	150.7	151.5	151.6	153.8	156.9	138.4	130.0	132.7	132.7	135.6	141.0
28	186.1	151.4	152.6	152.8	154.7	157.7	140.4	131.2	133.9	134.2	136.9	142.6
29	189.3	152.5	153.3	153.8	155.6	158.4	142.4	132.3	135.0	135.3	138.0	143.7
30	192.5	153.3	154.0	154.6	156.4	159.1	144.4	133.4	136.1	136.4	139.2	145.1
31	195.5	154.5	154.2	155.4	157.3	159.7	146.4	134.6	137.2	137.6	140.5	146.1
32	198.6	155.3	156.1	156.3	158.0	160.2	148.3	135.9	138.4	138.8	141.6	147.6
33	201.3	156.2	157.0	157.1	158.6	160.8	150.6	137.0	139.7	140.1	142.8	148.8
34	203.8	156.8	157.6	157.8	159.2	161.4	153.1	138.1	140.9	141.2	144.1	149.6
35	206.1	157.8	158.6	158.4	159.8	161.8	155.5	139.2	142.0	142.2	145.1	150.9
36	208.5	158.7	159.3	159.0	160.5	162.3	157.7	140.1	142.8	143.1	146.4	151.9
37	210.5	159.0	159.8	159.6	160.9	162.6	159.9	141.2	143.7	144.3	147.7	152.8
38	212.2	159.8	160.2	160.3	161.3	163.0	162.4	142.4	145.0	145.5	148.9	154.0
39	214.3	159.8	161.0	160.9	161.8	163.3	164.9	143.4	146.2	146.7	149.9	154.9
40	215.9	161.2	161.3	161.4	162.2	163.5	167.9	144.4	147.3	147.8	151.1	155.9
41	217.4	164.8	161.8	162.1	162.6	163.8	170.8	145.6	148.3	148.7	152.3	156.8
42	219.1	168.6	162.0	162.4	163.0	164.2	173.5	146.7	149.5	149.9	153.2	157.8
43	220.2	173.6	162.6	162.4	163.4	164.5	176.5	147.5	150.6	150.8	154.2	158.5
44	221.9	181.7	162.9	162.7	163.6	164.8	179.5	148.3	151.7	152.1	155.3	159.5
45	223.3	192.4	164.1	162.9	164.0	165.0	182.9	149.3	152.7	153.1	156.3	160.4
46	224.3	200.6	165.7	163.5	164.2	165.1	186.0	150.3	153.6	153.9	157.2	161.0
47	225.9	207.8	167.9	163.9	164.6	165.4	189.4	151.2	154.5	154.7	158.0	161.7
48	227.0	212.3	172.2	164.4	164.9	165.6	192.9	151.9	155.3	155.6	158.8	162.4
49	228.1	216.5	182.0	165.3	165.2	165.8	196.3	152.5	156.1	156.4	159.6	163.0
50	229.0	219.0	194.9	166.7	165.3	166.0	199.9	153.3	157.1	157.3	160.3	163.6
51	229.8	221.6	207.2	168.6	165.4	166.3	203.3	154.4	157.9	158.1	161.1	164.2
52	231.1	223.6	215.1	172.3	165.7	166.5	206.9	155.5	158.6	159.0	161.8	164.6
53	232.3	225.5	219.2	182.4	166.0	166.6	210.4	156.3	159.9	159.7	162.5	165.2
54	233.4	227.6	222.6	197.5	166.0	166.7	214.1	158.5	161.1	160.5	163.0	165.7

ASTM Class	C	C	C	C	C	C	C	C	C	C	C	C
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865541	865542	865543	865544	865545	865546	865535	865536	865537	865538	865539	865540
Date	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09	4/14/09	4/28/09	4/28/09	4/28/09	4/28/09	4/28/09
Distillation, D86 (^{o}F)												
55	234.1	229.6	225.8	210.7	166.4	166.8	217.6	164.5	162.2	161.2	163.3	166.1
56	235.2	231.2	227.9	218.5	167.1	167.1	221.3	173.3	164.3	161.9	163.8	166.6
57	236.4	232.6	229.6	222.7	167.6	167.3	225.1	184.1	167.2	162.3	164.4	167.0
58	237.2	233.8	232.0	226.0	167.9	167.5	229.2	194.4	170.5	162.9	165.0	167.2
59	238.3	234.5	233.6	228.9	168.5	167.7	232.9	204.1	176.4	163.5	165.4	167.7
60	239.4	235.5	234.6	230.8	170.3	167.7	236.7	212.7	188.9	165.0	166.0	168.0
61	240.3	236.9	236.0	232.4	178.5	167.9	240.6	219.5	203.8	165.7	166.5	168.5
62	241.3	237.5	237.6	233.7	198.6	168.1	244.3	225.8	216.7	167.5	167.0	168.8
63	242.4	238.5	238.3	235.1	220.2	168.3	248.0	231.3	225.9	171.6	167.4	169.2
64	243.7	238.6	238.7	237.3	227.9	168.4	251.4	236.1	233.4	189.5	167.7	169.4
65	245.1	239.2	239.3	239.5	231.4	168.6	255.2	240.8	239.0	211.1	168.5	169.7
66	246.4	238.1	240.5	240.9	234.0	168.5	259.2	245.1	243.6	225.9	169.1	170.0
67	247.7	239.7	241.4	242.0	236.2	168.8	263.6	248.8	248.1	235.0	169.3	170.2
68	249.0	243.3	242.4	242.5	238.4	169.2	266.9	252.7	252.3	240.8	170.2	170.6
69	250.4	246.2	243.6	242.5	240.3	169.5	270.9	257.1	256.4	246.1	179.9	170.8
70	251.9	248.2	245.2	244.0	242.0	169.9	273.9	261.6	260.1	252.2	216.8	171.1
71	254.0	249.5	247.2	246.2	243.9	170.0	277.5	265.7	261.1	257.5	237.7	171.6
72	255.8	251.1	249.6	248.2	245.8	170.0	281.5	269.5	263.8	263.0	248.0	171.8
73	257.6	252.5	251.5	249.8	247.7	170.4	284.9	273.4	269.9	267.0	256.1	172.1
74	259.5	254.2	253.7	250.8	249.3	170.7	288.6	277.8	276.3	270.1	262.2	172.4
75	261.5	256.3	255.2	252.7	250.6	182.6	291.9	281.6	281.3	275.2	267.0	172.7
76	263.7	258.2	256.0	255.3	252.6	218.5	295.4	284.9	285.4	280.5	270.8	172.6
77	265.8	260.0	257.6	257.4	254.5	238.4	298.9	288.5	289.0	285.6	275.5	179.3
78	268.2	262.6	259.0	259.4	256.0	242.2	302.3	293.0	292.6	289.9	280.0	249.2
79	271.3	265.4	260.9	261.2	257.9	245.6	305.4	296.9	296.6	293.4	284.2	267.9
80	274.5	269.0	265.1	262.8	260.2	249.0	309.3	300.2	300.6	296.8	287.9	275.4
81	278.0	271.9	269.8	266.1	263.8	253.6	313.1	303.9	304.3	300.5	289.7	281.3
82	282.1	275.3	274.0	270.8	267.4	258.5	316.0	307.9	307.8	304.7	294.0	287.0
83	286.4	279.5	277.4	275.3	271.3	262.7	317.7	311.6	311.5	308.9	300.2	292.3
84	290.2	283.9	280.6	279.9	276.1	266.8	318.1	315.1	315.3	312.2	306.8	297.4
85	294.6	288.9	286.0	284.8	280.5	271.0	323.5	318.2	318.5	313.1	311.8	302.5
86	299.9	293.4	291.8	289.9	285.1	275.3	329.6	320.2	322.1	318.1	315.7	306.9
87	304.8	298.5	297.2	295.3	290.7	280.1	333.7	323.5	323.6	324.4	319.8	311.4
88	309.6	304.0	302.6	300.6	295.6	285.5	337.6	330.0	328.4	329.3	324.6	316.3
89	314.8	309.2	309.0	306.5	300.9	291.8	341.9	334.9	335.0	333.2	329.3	320.5
90	320.3	314.9	314.3	312.2	307.3	298.9	346.5	339.3	340.2	337.5	333.5	326.2
91	324.6	319.8	321.1	318.0	315.5	306.4	351.6	344.1	345.7	342.3	338.1	328.7
92	329.9	326.4	327.1	324.1	323.3	313.8	357.0	348.9	351.1	347.3	344.0	335.8
93	334.9	333.6	331.1	327.9	330.3	320.3	362.5	352.9	356.2	352.9	349.7	343.6
94	340.2	339.5	338.4	334.2	335.8	327.1	370.1	359.3	360.8	360.6	353.7	349.8
95	347.3	344.5	344.0	341.6	340.7	332.9	379.0	369.0	369.6	368.4	362.3	357.3
96	353.4	350.6	350.9	348.8	347.8	341.1	388.7	379.0	381.2	377.2	374.1	367.1
97	362.5	359.4	360.6	359.5	358.7	350.5	401.5	391.7	393.5	390.2	385.4	378.3
98	378.9	376.3	377.2	372.9		363.3		405.9	408.9	405.4	400.7	396.6
99												
FBP	393.3	381.0	381.1	379.8	378.1	375.4	420.7	416.3	418.1	416.0	414.1	408.4
Recovered (%)	97.4	97.4	97.4	97.1	97.6	97.8	98.3	97.2	97.9	97.4	97.5	97.4
Residue (%)	0.8	1.0	1.0	1.0	1.0	0.8	0.9	0.7	0.9	0.8	0.7	0.9
Loss (%)	1.8	1.6	1.6	1.9	1.4	1.4	0.8	2.1	1.2	1.8	1.8	1.7
$T_{V/L=20}$ (^{o}F)	137.8	123.8	124.1	124.4	125.6	128.8	126.2	116.7	116.6	118.1	118.1	120.9
RON							91.5	95.3	96.3	97.0	98.0	99.8
MON							82.3	85.3	85.3	85.5	86.3	87.8
(R+M)/2							86.9	90.3	90.8	91.2	92.2	93.8

ASTM Class	C	C	C	C	C	C	C	C	C	C	C	C
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865515	865548	865549	865550	865551	871059	865589	865590	865591	865592	865593	865594
Date	4/6/09	4/28/09	4/28/09	4/28/09	4/28/09	5/8/09	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09
Dry Vapor Pressure Equivalent (psi)	10.21	11.17	11.19	10.93	10.98	9.88	9.44	10.21	10.05	9.99	9.98	9.72
Specific Gravity	0.7356	0.7403	0.7417	0.7489	0.7574	0.7542	0.7564	0.7658	0.7636	0.7611	0.7562	0.7662
Ethanol (Vol%)	0.00	9.86	12.39	14.82	20.13	29.73	0.00	9.99	12.66	14.99	20.73	30.39
Ethanol (Wt%)	0.00	10.58	13.26	15.71	21.10	31.29	0.00	10.36	13.17	15.64	21.76	31.48
Distillation, D86 (^{o}F)												
IBP	84.9	90.8	91.8	88.8	92.2	93.5	89.1	91.4	94.7	94.0	95.8	95.0
1	89.9	95.6	96.3	93.1	97.0	97.9	94.9	96.0	98.1	97.8	99.3	100.1
2	94.9	100.3	100.8	97.4	101.8	102.3	100.7	100.6	101.6	101.5	102.9	105.1
3	99.1	103.5	104.2	101.6	105.1	106.6	105.7	105.0	105.1	105.2	106.4	109.9
4	102.1	106.0	106.8	105.0	107.9	110.1	109.6	108.2	108.8	109.2	110.3	113.9
5	104.8	107.9	108.7	107.4	110.1	113.4	112.7	110.6	111.7	112.1	113.1	116.9
6	107.3	109.6	110.7	109.3	112.0	115.9	115.4	113.0	113.8	114.6	115.7	119.1
7	109.6	111.2	112.4	111.1	113.6	118.1	118.2	115.1	115.8	116.5	117.6	121.1
8	111.7	112.7	113.6	112.8	115.3	120.3	120.6	116.9	117.8	118.1	119.5	123.2
9	113.8	114.1	114.9	114.1	116.9	122.0	122.7	118.4	119.4	119.7	121.4	125.0
10	115.6	115.4	116.4	115.5	118.4	123.8	124.8	120.2	121.0	121.5	123.1	126.6
11	117.4	116.8	117.8	117.0	119.6	125.5	127.0	121.6	122.5	123.1	124.5	128.5
12	119.3	118.1	119.0	118.3	120.9	126.9	129.3	123.1	123.7	124.6	126.2	130.2
13	121.2	119.1	120.2	119.6	122.5	128.8	131.4	124.2	125.4	126.0	127.2	131.6
14	123.0	120.2	121.3	120.8	123.9	130.1	133.2	125.6	126.6	127.4	128.6	133.1
15	124.8	121.5	122.5	122.1	125.2	131.4	135.1	127.0	127.6	128.7	130.5	134.4
16	126.7	122.8	123.8	123.4	126.5	133.0	137.1	128.1	128.8	129.9	131.5	135.9
17	128.5	124.0	125.0	124.9	127.8	134.6	139.2	129.0	130.1	131.2	132.9	137.5
18	130.3	125.1	126.0	126.3	129.3	135.7	141.3	130.3	131.5	132.5	133.9	138.9
19	132.0	126.2	127.2	127.5	130.5	137.3	143.3	131.6	132.7	133.9	135.4	140.2
20	133.7	127.6	128.4	128.8	131.8	138.4	145.2	132.8	134.0	135.1	136.8	141.3
21	135.6	129.0	129.7	130.1	133.2	139.9	147.3	133.9	135.1	136.1	138.1	142.5
22	137.5	130.2	131.0	131.3	134.5	141.2	149.3	135.2	136.2	137.1	139.4	143.8
23	139.5	131.5	132.3	132.5	135.7	142.4	151.4	136.5	137.4	138.2	140.1	145.1
24	141.5	132.7	133.6	133.8	137.0	143.5	153.5	137.4	138.7	139.3	141.1	146.4
25	143.5	133.7	134.5	135.0	138.3	144.8	155.6	138.5	139.5	140.4	142.6	147.4
26	145.4	134.8	135.7	135.9	139.4	146.1	157.8	139.5	140.7	141.5	143.2	148.5
27	147.6	136.0	136.6	137.0	140.5	147.3	159.8	140.5	141.6	142.6	144.4	149.6
28	150.0	137.0	137.6	138.2	141.7	148.3	161.8	141.4	141.9	143.4	145.7	150.5
29	152.2	138.1	138.9	139.6	142.9	149.3	164.1	142.4	143.1	144.5	146.5	151.5
30	154.4	139.0	139.8	140.8	144.1	150.3	166.4	143.2	144.0	145.5	147.8	152.4
31	156.4	140.2	141.1	141.9	144.8	151.3	168.6	144.2	145.1	146.5	148.2	153.3
32	158.6	141.4	142.1	142.8	146.0	152.4	170.9	145.2	146.2	147.2	149.5	154.0
33	161.0	142.4	143.2	143.8	147.3	153.3	173.3	146.1	147.2	148.3	150.3	154.8
34	163.5	143.4	144.3	144.9	148.2	153.9	175.6	146.8	148.1	149.2	151.4	155.7
35	165.9	144.5	145.0	146.1	149.1	155.1	177.9	147.8	148.8	150.0	152.3	156.6
36	168.1	145.3	146.0	147.1	150.0	155.9	180.2	148.8	149.7	151.0	152.9	157.3
37	170.8	146.3	147.0	148.0	151.0	156.6	182.8	149.4	150.8	151.7	153.8	158.0
38	173.1	147.4	148.0	148.9	152.0	157.4	185.4	150.0	151.7	152.7	154.6	158.8
39	175.8	148.4	148.9	149.8	152.7	158.1	187.9	150.7	152.6	153.4	155.3	159.4
40	178.5	149.3	150.0	150.8	153.8	158.8	190.3	151.7	153.2	154.1	156.2	160.0
41	181.2	150.1	150.9	151.6	154.5	159.6	192.6	152.5	153.7	154.6	157.1	160.7
42	184.1	151.0	151.6	152.3	155.4	160.0	194.9	153.2	154.6	155.5	157.8	161.3
43	187.0	152.1	152.4	153.2	156.4	160.7	197.4	153.9	155.2	156.2	158.4	161.8
44	189.9	152.9	153.1	154.1	157.3	161.3	200.0	154.2	155.9	156.7	158.9	162.4
45	193.0	153.4	153.8	155.0	157.9	162.0	202.7	156.2	156.3	157.6	159.5	163.0
46	195.8	154.3	154.8	155.8	158.5	162.6	205.3	158.1	157.6	158.2	160.2	163.4
47	198.4	155.0	155.5	156.5	159.1	163.0	208.0	160.1	157.6	158.7	160.9	163.8
48	201.3	156.7	156.4	157.2	159.6	163.5	210.7	163.6	158.5	159.2	161.5	164.2
49	204.1	159.3	157.1	157.9	160.2	164.0	213.2	169.9	159.5	159.9	161.9	164.7
50	207.1	161.9	157.4	158.5	160.8	164.4	215.8	177.4	159.8	160.4	162.6	165.2
51	209.8	164.7	158.2	159.1	161.3	164.8	218.5	185.7	161.2	161.1	162.9	165.6
52	212.8	170.0	159.1	159.7	161.9	165.2	221.1	192.9	161.2	161.5	163.5	166.1
53	215.8	177.5	160.2	160.1	162.5	165.6	223.7	199.3	163.9	162.3	164.0	166.4
54	218.8	186.6	161.0	160.8	162.9	166.0	226.3	204.5	169.3	163.2	164.5	166.7

ASTM Class	C	C	C	C	C	C	C	C	C	C	C	C
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865515	865548	865549	865550	865551	871059	865589	865590	865591	865592	865593	865594
Date	4/6/09	4/28/09	4/28/09	4/28/09	4/28/09	5/8/09	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09
Distillation, D86 (^{o}F)												
55	221.7	195.6	162.5	161.2	163.1	166.4	229.1	209.9	176.6	163.1	164.9	167.1
56	224.4	203.4	165.5	161.9	163.7	166.7	231.9	214.9	185.3	164.2	165.5	167.5
57	227.3	210.2	171.2	162.7	164.4	167.1	234.6	219.0	196.4	167.1	165.8	167.7
58	230.4	215.9	181.6	163.3	164.9	167.3	237.1	222.8	205.9	173.3	166.3	168.1
59	233.2	220.6	196.2	164.2	164.8	167.4	239.5	226.4	214.5	184.2	166.7	168.4
60	236.2	224.7	208.2	166.4	165.2	167.9	242.0	230.1	220.7	197.3	167.3	168.7
61	239.0	228.4	216.3	171.8	165.7	168.2	244.8	232.9	226.0	209.7	167.6	169.0
62	241.8	232.0	222.8	184.6	165.5	168.6	247.6	235.8	229.8	219.2	168.5	169.4
63	244.6	235.4	227.7	202.7	166.0	168.8	250.1	239.1	233.6	225.0	170.5	169.6
64	247.5	238.3	231.0	217.0	166.6	169.0	252.6	242.1	237.2	231.6	174.4	169.8
65	250.3	241.5	234.5	225.0	167.4	169.3	255.1	244.8	240.4	236.8	176.8	170.1
66	253.3	244.9	237.3	230.4	168.1	169.7	257.6	247.1	243.8	240.5	188.9	170.4
67	256.6	247.8	240.7	235.3	168.7	170.0	260.2	250.1	247.3	244.1	213.8	170.8
68	259.8	250.5	244.4	240.2	176.1	170.3	262.9	253.1	250.7	247.8	229.4	171.1
69	263.0	253.5	247.5	244.8	211.6	170.6	265.7	255.7	254.0	251.4	236.9	171.4
70	265.6	256.9	250.2	249.1	230.2	170.9	268.6	259.0	256.4	254.5	240.7	172.0
71	268.9	260.5	254.5	253.3	239.1	171.0	271.6	261.6	259.0	257.6	245.6	172.7
72	272.9	263.7	259.3	257.7	244.9	171.6	274.3	263.9	261.5	260.4	249.8	172.9
73	276.4	266.8	264.1	261.1	250.9	171.7	276.8	267.1	263.8	262.5	255.0	173.2
74	279.9	270.6	268.8	263.1	256.7	172.4	279.4	270.4	267.5	265.8	260.3	173.7
75	283.4	274.2	272.5	263.8	262.0	172.7	282.1	273.8	270.7	269.1	264.0	193.5
76	286.8	277.7	275.5	268.4	266.7	174.2	285.0	276.4	273.6	272.2	267.7	234.2
77	289.9	281.5	279.3	274.1	271.3	190.5	287.5	278.6	277.0	275.2	271.2	254.0
78	293.3	285.6	283.4	279.1	274.9	249.6	290.2	280.9	273.9	273.1	274.3	260.8
79	297.1	289.7	287.9	283.8	278.3	260.1	293.3	284.0	278.2	274.8	273.4	265.6
80	301.0	293.8	292.5	288.2	281.7	267.1	296.2	288.1	284.9	281.3	275.4	270.3
81	305.1	297.9	296.8	290.7	285.5	274.5	298.7	291.6	289.7	287.1	280.0	274.6
82	309.2	302.1	300.7	292.0	290.7	279.7	301.1	294.7	293.4	291.1	283.7	278.5
83	313.1	306.5	304.7	297.0	297.2	286.0	303.9	297.7	296.3	293.9	287.9	282.3
84	316.6	310.5	308.8	305.0	303.1	291.8	305.5	300.9	299.9	296.2	291.3	285.9
85	319.2	314.8	313.2	310.3	308.2	297.1	308.5	303.3	303.0	300.3	295.3	289.3
86	323.2	318.7	317.7	314.4	312.4	301.7	313.7	303.9	304.6	304.8	299.8	293.3
87	328.5	320.8	322.1	318.7	316.9	306.1	318.0	310.1	306.9	309.0	303.4	298.3
88	333.3	325.2	327.1	322.8	321.3	311.0	322.6	315.9	312.8	313.2	307.8	302.1
89	337.8	331.6	331.4	327.3	324.5	317.1	327.1	320.0	318.7	315.9	313.0	305.2
90	342.4	337.2	333.5	332.6	328.7	322.2	331.7	323.4	323.1	317.1	318.7	310.9
91	347.3	342.5	340.4	335.7	333.1	326.6	337.0	327.7	327.6	324.0	323.6	317.3
92	352.2	347.5	347.0	338.7	340.4	333.6	342.0	331.8	332.7	331.1	328.7	323.1
93	357.5	352.8	353.7	348.2	347.8	341.0	347.1	336.3	336.2	337.6	332.0	329.0
94	364.2	358.0	360.6	356.0	354.6	348.2	353.4	340.4	342.5	342.3	338.9	335.3
95	372.2	366.9	368.3	364.2	361.2	354.3	360.7	350.8	350.9	348.1	342.4	342.8
96	381.2	376.7	377.1	372.9	372.0	359.0	370.1	361.2	360.0	358.8	353.8	352.3
97	391.3	387.3	387.7	383.9	385.1	372.1	386.6	374.1	370.8	370.5	367.0	365.5
98	406.2	401.0	403.4	396.3	399.8	388.3	407.2		393.2	389.4	386.3	384.2
99												
FBP	413.9	407.1	409.4	406.7	405.8	403.2	417.9	404.5	405.7	403.3	397.7	399.1
Recovered (%)	98.0	97.9	98.0	97.6	98.0	97.7	97.6	97.5	97.5	97.3	97.4	97.7
Residue (%)	0.9	1.0	1.0	1.0	1.0	0.8	1.2	1.0	0.8	1.0	0.9	1.0
Loss (%)	1.1	1.1	1.0	1.4	1.0	1.5	1.2	1.5	1.7	1.7	1.7	1.3
$T_{V/L=20}$ (^{o}F)	117.97	120.0	120.3	120.7	121.8	126.4	140.8	125.8	125.7	126.2	128.4	128.8
RON												
MON												
(R+M)/2												

ASTM Class	C	C	C	C	C	C	C	C	C	C	C	C
State	TX	TX	TX	TX	TX	TX	LA	LA	LA	LA	LA	LA
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865583	865584	865585	865586	865587	865588	865601	865602	865603	865604	865605	865606
Date	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09
Dry Vapor Pressure Equivalent (psi)	8.30	9.50	9.36	9.34	9.22	9.10	9.60	10.43	10.37	10.22	10.03	9.72
Specific Gravity	0.7517	0.7629	0.7559	0.7569	0.7660	0.7632	0.7311	0.7419	0.7378	0.7391	0.7424	0.7485
Ethanol (Vol%)	0.00	10.10	12.45	14.90	20.75	29.77	0.00	10.16	12.72	14.96	20.92	31.08
Ethanol (Wt%)	0.00	10.51	13.08	15.63	21.50	30.97	0.00	10.87	13.69	16.07	22.37	32.97
Distillation, D86 (^{o}F)												
IBP	89.2	95.6	96.4	96.9	100.1	100.6	85.0	90.9	98.5	91.6	97.6	98.1
1	96.7	101.3	101.8	102.6	105.3	104.5	90.2	96.3	101.8	97.9	102.7	104.3
2	104.1	106.9	107.2	108.3	110.6	108.5	95.4	101.7	105.1	104.2	107.8	110.6
3	110.0	110.9	111.5	112.3	114.4	112.8	100.6	107.1	108.4	109.9	112.5	116.0
4	114.3	113.8	114.2	115.3	117.2	117.1	106.9	112.0	111.7	114.1	116.2	119.6
5	117.5	116.1	116.5	117.6	119.1	120.3	112.3	115.1	115.0	117.3	119.5	123.3
6	120.4	118.0	118.6	119.8	120.7	122.6	115.9	117.8	118.0	120.3	122.1	125.7
7	122.8	119.7	120.4	121.6	122.5	124.5	120.0	120.1	120.4	122.8	124.3	128.0
8	125.3	121.3	122.0	123.0	124.0	126.2	124.1	122.9	122.6	125.0	126.6	130.6
9	127.5	122.7	123.5	124.3	125.6	127.6	127.9	124.7	125.0	127.1	128.7	133.0
10	129.6	123.9	124.7	125.7	126.7	129.1	131.5	126.8	127.1	129.1	130.7	135.1
11	131.6	125.0	126.0	127.1	128.1	130.8	135.1	128.6	129.1	131.1	132.5	137.2
12	133.4	126.2	127.3	128.5	129.5	132.2	139.3	130.5	131.1	133.0	134.6	139.3
13	135.3	127.3	128.5	129.5	131.0	133.3	142.6	132.6	133.0	135.0	136.6	141.5
14	137.1	128.1	129.6	130.5	132.0	134.6	145.9	134.4	134.9	137.1	138.5	143.2
15	138.9	129.3	130.6	131.6	132.8	135.9	149.9	136.3	136.8	138.8	140.2	145.0
16	140.8	130.4	131.5	132.7	133.9	137.2	153.5	137.9	138.6	140.5	142.1	146.9
17	142.5	131.7	132.3	133.7	135.1	138.5	157.2	139.9	140.3	142.4	143.8	148.5
18	144.3	132.6	133.4	134.6	136.3	139.7	160.8	141.5	141.9	143.9	145.6	149.8
19	146.2	133.6	134.6	135.7	137.3	140.7	164.7	143.1	143.4	145.4	147.0	151.2
20	148.0	134.7	135.6	136.7	138.1	141.8	168.5	144.4	144.9	146.8	148.4	152.4
21	149.6	135.9	136.4	137.7	139.2	142.7	172.2	146.0	146.5	148.2	149.7	153.3
22	151.5	136.9	137.6	138.7	140.5	143.6	176.0	147.4	148.0	149.5	151.0	154.3
23	153.1	137.8	138.7	139.7	141.5	144.7	179.3	148.7	149.2	150.7	152.2	155.3
24	154.7	138.7	139.8	140.6	142.4	145.8	182.6	149.8	150.5	151.8	153.2	156.0
25	156.7	139.6	140.9	141.6	143.4	146.7	186.6	151.1	151.6	152.7	154.1	157.0
26	158.5	140.6	141.7	142.6	144.3	147.8	190.2	152.1	152.6	153.6	155.0	157.8
27	160.4	141.6	142.6	143.3	145.2	148.7	193.5	153.0	153.6	154.5	156.0	158.5
28	162.3	142.5	143.4	144.1	145.9	149.4	196.5	153.8	154.4	155.4	157.0	159.2
29	164.3	143.2	144.1	145.1	147.0	150.3	199.4	154.6	155.3	156.3	157.7	159.8
30	166.2	144.0	144.9	145.8	147.8	151.4	201.9	155.5	156.1	157.1	158.1	160.4
31	168.2	145.0	145.8	146.7	148.6	152.0	204.5	156.5	156.9	157.6	158.8	160.7
32	170.4	145.8	146.8	147.4	149.3	152.7	206.9	157.3	157.6	158.2	159.5	161.3
33	172.4	146.4	147.4	148.3	149.9	153.6	208.8	157.9	158.3	158.9	159.8	161.6
34	174.3	147.0	148.2	149.0	150.6	154.5	211.0	159.0	158.8	159.4	160.2	162.0
35	176.4	147.8	149.2	149.8	151.5	155.3	212.6	159.8	159.3	159.9	160.6	162.4
36	178.5	148.4	150.0	150.6	152.6	156.0	214.4	160.3	159.9	160.4	161.1	162.7
37	180.4	149.1	150.6	151.4	153.1	156.6	216.0	161.6	160.4	160.8	161.5	163.1
38	182.5	149.9	151.3	152.1	153.8	157.4	217.4	163.1	160.7	161.3	161.7	163.4
39	184.6	150.5	152.0	152.8	154.6	157.9	218.9	165.2	161.4	161.7	162.2	163.7
40	186.6	151.2	152.8	153.4	155.2	158.6	220.0	168.5	162.2	161.8	162.3	164.0
41	188.9	152.1	153.5	154.0	155.7	159.3	221.3	175.6	162.8	162.2	162.3	164.1
42	191.4	152.5	154.1	154.8	156.2	159.8	222.5	183.8	163.4	162.6	163.1	164.3
43	193.8	153.2	154.9	155.4	156.9	160.5	223.6	194.3	163.5	163.0	163.7	164.5
44	196.0	154.1	155.7	156.1	157.8	161.1	225.1	202.8	165.1	163.4	164.1	164.9
45	198.2	154.7	156.5	156.9	158.5	161.7	226.2	209.5	168.5	163.5	164.5	165.1
46	200.5	155.5	157.1	157.4	158.9	162.2	226.9	214.2	173.7	164.0	164.8	165.3
47	202.6	157.8	157.9	158.0	159.4	162.6	227.4	217.4	182.3	165.2	165.0	165.5
48	204.8	161.4	158.8	158.3	159.9	163.1	228.5	219.8	193.6	166.8	165.2	165.6
49	207.2	167.3	159.5	159.0	160.6	163.6	229.5	221.8	204.9	169.1	165.6	165.8
50	209.8	173.4	160.7	159.7	161.2	164.0	230.5	222.7	213.2	173.2	165.9	166.0
51	212.5	179.3	162.0	160.3	161.7	164.5	231.2	224.1	218.1	182.5	165.8	166.2
52	214.8	186.2	164.3	160.6	162.2	165.0	231.8	226.7	221.1	196.9	166.0	166.3
53	217.2	193.1	168.0	160.9	162.7	165.4	232.4	228.4	223.3	210.1	166.4	166.4
54	219.7	198.9	172.6	161.5	163.0	165.8	233.7	230.0	225.4	217.9	166.8	166.4

ASTM Class	C	C	C	C	C	C	C	C	C	C	C	C
State	TX	TX	TX	TX	TX	TX	LA	LA	LA	LA	LA	LA
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865583	865584	865585	865586	865587	865588	865601	865602	865603	865604	865605	865606
Date	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09	4/14/09	4/29/09	4/29/09	4/29/09	4/29/09	4/29/09
Distillation, D86 (^{o}F)												
55	222.2	203.9	178.8	162.8	163.3	166.1	234.7	231.3	227.5	221.5	167.4	166.7
56	224.7	208.5	186.8	165.2	164.0	166.5	235.6	231.8	229.2	224.2	168.4	167.0
57	227.1	212.9	195.9	167.7	164.5	166.9	236.4	232.8	230.6	226.7	169.4	167.2
58	229.5	217.1	204.0	171.7	165.0	167.2	237.1	234.0	232.3	228.4	170.2	167.3
59	231.8	220.8	210.5	179.3	165.4	167.6	238.0	232.6	234.0	229.7	174.3	167.5
60	234.2	223.4	215.9	191.8	165.8	167.8	239.2	234.4	234.7	232.0	188.5	167.7
61	236.8	226.3	220.3	203.3	166.3	168.2	240.3	235.8	234.4	234.3	209.5	167.7
62	239.6	229.7	224.6	212.2	166.7	168.6	241.3	235.9	234.8	235.7	222.3	167.8
63	242.4	232.7	228.7	218.8	167.5	168.8	241.8	236.7	235.7	236.5	227.0	167.9
64	245.0	235.7	232.3	225.3	168.6	169.2	243.0	237.8	236.5	237.7	229.5	168.2
65	247.3	238.6	235.6	230.6	171.9	169.5	244.5	239.2	237.3	238.1	231.8	168.4
66	249.6	241.4	238.5	235.1	181.9	169.8	245.6	240.9	238.9	237.7	234.3	168.4
67	252.3	243.6	241.5	239.3	202.8	170.0	247.1	242.1	238.7	238.1	236.3	168.7
68	255.1	246.1	244.6	242.8	221.5	170.2	248.3	243.6	239.7	239.6	238.1	169.0
69	257.8	249.6	247.1	246.2	231.8	170.5	249.2	244.2	242.6	241.7	239.8	169.3
70	260.5	252.7	249.2	249.6	237.3	170.8	250.4	244.1	245.0	243.7	241.3	169.7
71	263.5	255.4	251.8	252.5	241.6	171.3	252.2	245.9	247.3	245.5	242.8	169.9
72	266.3	258.1	255.0	255.1	240.2	171.9	254.0	248.5	248.9	246.2	243.9	169.5
73	268.9	260.5	257.8	256.8	245.7	172.3	255.9	250.5	249.8	247.3	244.8	170.4
74	271.4	263.4	260.5	260.1	253.2	173.3	257.8	252.6	250.7	249.5	246.4	188.6
75	273.9	266.6	263.9	264.1	258.5	175.0	259.9	254.7	252.0	251.9	248.5	228.2
76	276.5	269.5	266.8	267.1	263.0	177.4	262.0	255.9	253.7	254.1	250.4	235.9
77	279.7	272.2	267.5	270.1	266.5	202.5	263.9	257.6	255.8	256.2	251.6	240.6
78	282.4	275.2	269.1	272.6	269.4	243.2	267.1	260.0	258.2	257.7	253.9	244.9
79	285.1	277.7	274.1	275.3	272.4	253.4	270.5	263.3	261.1	259.6	255.9	248.1
80	288.2	281.0	279.4	278.9	275.0	258.8	273.5	266.1	263.6	262.5	258.0	251.6
81	291.2	284.5	282.9	282.9	278.0	263.4	276.5	269.6	266.8	265.5	261.0	255.1
82	293.5	287.3	285.1	286.6	280.8	267.7	280.9	273.2	270.8	269.2	264.7	258.8
83	294.5	290.7	286.2	290.1	284.5	271.8	285.1	277.0	274.8	273.3	268.6	262.3
84	298.8	294.9	289.7	293.4	288.5	275.8	290.1	282.2	278.9	277.5	273.0	266.0
85	303.6	298.7	295.3	295.3	292.7	280.3	295.3	286.8	283.8	282.2	277.1	269.4
86	307.8	301.3	300.0	298.3	296.5	285.1	300.3	291.9	289.1	287.9	281.7	273.0
87	311.5	303.1	304.0	304.0	299.3	289.1	306.0	298.2	295.5	294.3	287.1	278.1
88	314.9	308.1	307.8	308.5	302.5	293.0	310.9	304.9	302.2	300.7	293.8	284.8
89	318.1	313.2	311.9	312.0	305.2	298.0	316.1	310.3	308.5	307.1	300.3	291.3
90	321.6	317.8	315.8	312.9	311.6	302.6	322.2	317.0	314.8	313.5	306.8	297.9
91	324.7	321.9	319.5	318.6	317.0	307.1	328.8	322.9	321.0	319.7	313.7	306.1
92	328.6	325.5	323.7	324.3	322.0	311.8	331.2	330.5	327.5	325.4	320.2	314.7
93	333.2	330.5	328.3	330.2	326.2	317.0	337.3	335.1	334.5	332.0	327.4	323.4
94	337.4	336.2	332.3	336.5	331.0	323.0	344.4	342.1	341.7	339.4	333.7	331.9
95	343.2	342.1	338.6	342.6	337.7	329.4	350.7	349.0	348.8	347.3	339.9	339.6
96	352.9	348.2	346.8	347.7	346.4	336.9	358.9	357.3	356.9	355.7	349.2	347.2
97	363.1	357.0	354.7	357.5	356.2	345.8	369.2	368.0	367.5	367.0	360.4	357.4
98	378.3	369.7	366.3	373.1	370.1	357.2	388.0	387.1	385.3	382.1	376.2	372.7
99												
FBP	389.8	381.6	382.3	383.4	380.3	378.0	403.5	393.4	394.9	394.4	389.9	386.6
Recovered (%)	98.1	98.3	98.3	98.2	98.2	98.5	97.4	97.4	97.1	97.6	97.8	97.7
Residue (%)	0.8	0.6	0.5	0.8	0.8	0.2	0.9	1.0	1.0	1.0	0.8	0.9
Loss (%)	1.1	1.1	1.2	1.0	1.0	1.3	1.7	1.6	1.9	1.4	1.4	1.4
$T_{V/L=20}$ (^{o}F)	144.3	129.4	130.6	130.7	131.5	131.4	147.2	128.0	129.8	129.7	129.7	133.3
RON												
MON												
(R+M)/2												

ASTM Class	C	C	C	C	C	C
State	LA	LA	LA	LA	LA	LA
Grade	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865595	865596	865597	865598	865599	865600
Date	4/14/09	4/28/09	4/28/09	4/28/09	4/28/09	4/28/09
Dry Vapor Pressure Equivalent (psi)	11.41	12.23	12.03	12.02	11.60	11.29
Specific Gravity	0.7418	0.7452	0.7465	0.7477	0.7502	0.7555
Ethanol (Vol%)	0.00	9.66	12.46	14.75	20.43	31.09
Ethanol (Wt%)	0.00	10.29	13.25	15.66	21.62	32.67
Distillation, D86 (^{o}F)						
IBP	82.3	85.6	86.9	86.8	85.9	89.9
1	86.2	88.9	90.1	90.3	89.3	93.7
2	90.2	92.2	93.4	93.7	92.8	97.4
3	94.1	95.5	96.6	97.2	96.2	101.2
4	97.8	98.8	100.0	100.4	99.8	105.5
5	100.9	101.8	103.0	103.4	103.3	109.0
6	103.6	104.3	105.5	105.9	106.2	111.2
7	106.2	106.5	107.6	108.4	108.9	113.9
8	108.7	108.4	109.6	110.4	111.1	116.2
9	111.0	110.4	111.8	112.3	113.1	118.3
10	113.3	112.2	113.7	114.2	115.0	120.4
11	115.4	113.8	115.4	115.9	117.0	122.2
12	117.6	115.3	116.9	117.8	118.8	124.3
13	120.0	117.0	118.7	119.5	120.5	126.5
14	122.1	118.7	120.5	121.2	122.2	128.5
15	124.3	120.4	122.1	122.9	123.9	130.5
16	126.7	121.9	123.7	124.5	125.8	132.2
17	128.9	123.6	125.1	126.2	127.7	133.9
18	131.3	125.1	126.8	127.7	129.5	136.0
19	133.8	126.7	128.4	129.5	131.5	137.8
20	136.4	128.3	130.2	131.3	133.1	139.5
21	139.0	130.0	131.8	133.1	134.6	141.0
22	141.4	131.6	133.4	134.5	136.3	142.4
23	144.1	133.2	135.1	136.2	137.9	143.9
24	146.7	134.6	136.5	137.6	139.5	145.5
25	149.3	136.0	137.9	139.1	140.9	146.8
26	151.9	137.5	139.3	140.3	142.2	148.1
27	154.5	139.0	140.8	141.5	143.4	149.3
28	157.2	140.3	142.2	142.6	144.7	150.5
29	159.9	141.6	143.4	144.0	146.0	151.6
30	162.8	142.8	144.6	145.3	147.2	152.5
31	165.4	143.9	145.7	146.3	148.2	153.4
32	168.2	145.0	146.9	147.3	149.4	154.4
33	171.1	146.2	148.0	148.5	150.3	155.4
34	173.8	147.2	149.0	149.5	151.3	156.3
35	176.6	148.1	150.1	150.4	152.3	157.1
36	179.6	148.9	150.9	151.3	153.1	157.8
37	182.3	149.5	151.7	152.1	154.1	158.6
38	185.0	150.4	152.6	153.0	154.9	159.2
39	187.8	151.3	153.4	153.8	155.7	159.9
40	190.5	151.9	154.2	154.5	156.5	160.5
41	193.3	152.7	155.0	155.2	157.2	161.0
42	196.1	153.4	155.7	155.9	157.8	161.6
43	198.9	153.9	156.4	156.8	158.4	162.1
44	201.6	154.4	157.2	157.8	159.1	162.6
45	204.6	155.1	157.8	158.7	159.7	163.1
46	207.5	155.3	158.5	159.5	160.3	163.6
47	210.3	155.7	159.0	159.8	160.8	163.9
48	213.2	157.9	159.5	160.1	161.4	164.4
49	215.8	162.5	160.4	160.5	161.9	164.9
50	218.7	170.5	161.5	160.8	162.4	165.4
51	221.4	180.5	162.6	161.3	162.9	165.8
52	224.0	190.8	164.9	161.8	163.3	166.2
53	226.8	199.9	168.3	162.2	163.6	166.6
54	229.5	207.4	173.0	162.9	164.0	166.9

ASTM Class	C	C	C	C	C	C
State	LA	LA	LA	LA	LA	LA
Grade	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	865595	865596	865597	865598	865599	865600
Date	4/14/09	4/28/09	4/28/09	4/28/09	4/28/09	4/28/09
Distillation, D86 (^{o}F)						
55	232.4	213.2	181.6	163.4	164.4	167.2
56	235.2	218.0	193.7	163.7	164.8	167.4
57	238.1	222.4	205.5	164.1	165.3	167.6
58	241.0	225.9	214.8	169.0	165.8	168.1
59	243.9	227.5	221.8	184.8	166.3	168.3
60	246.7	229.0	227.4	203.8	166.7	168.6
61	249.5	233.2	232.0	213.4	167.1	169.0
62	252.4	237.8	235.9	219.6	167.7	169.3
63	255.2	242.6	239.5	227.2	168.0	169.5
64	258.1	247.2	243.3	234.5	169.5	169.8
65	261.2	250.8	246.9	240.2	179.3	170.1
66	264.3	252.8	250.4	244.6	203.7	170.3
67	267.6	253.3	253.2	249.1	226.8	170.7
68	270.9	255.3	256.2	253.6	236.3	170.9
69	274.0	260.5	259.8	257.7	243.4	171.2
70	277.3	266.1	263.6	261.4	249.4	171.8
71	280.5	270.8	266.9	265.2	254.7	171.8
72	283.7	274.8	270.4	266.2	259.1	172.7
73	287.1	278.0	274.4	267.8	263.5	172.9
74	290.6	280.6	277.2	271.5	268.3	171.9
75	294.5	283.7	279.6	275.8	272.4	196.4
76	298.2	287.4	283.5	281.1	275.6	242.0
77	301.7	291.6	288.5	286.9	277.9	259.5
78	305.5	296.1	293.7	291.4	282.0	267.8
79	309.2	300.3	298.3	295.1	287.1	274.1
80	312.7	304.1	302.2	299.1	291.9	279.9
81	316.4	307.4	305.8	303.8	297.3	285.7
82	319.9	311.1	306.3	308.2	302.9	290.4
83	323.1	315.4	311.6	312.2	307.2	295.8
84	326.9	320.1	318.8	315.4	310.3	300.2
85	330.2	324.8	323.5	317.1	314.1	306.1
86	333.0	329.1	327.8	322.2	319.1	312.3
87	336.9	333.2	331.9	328.3	324.3	317.2
88	342.4	337.6	334.9	333.4	329.7	320.4
89	346.8	341.9	337.4	338.0	334.3	324.6
90	351.2	344.6	342.6	341.7	339.1	331.9
91	355.8	347.9	348.9	345.3	343.8	338.1
92	360.7	354.4	354.2	350.9	348.9	343.5
93	365.6	360.3	359.5	357.5	355.3	348.6
94	370.7	366.2	365.2	364.0	362.1	355.9
95	376.8	372.3	371.9	370.1	368.1	364.0
96	383.5	379.0	379.8	376.9	374.2	371.0
97	391.3	388.4	388.6	386.4	382.9	380.1
98	401.4	399.9	399.8	397.6	395.6	393.7
99						
FBP	411.2	407.9	407.8	407.1	405.1	404.3
Recovered (%)	97.7	97.2	97.2	97.3	97.1	97.4
Residue (%)	0.9	0.7	0.8	0.8	0.8	0.8
Loss (%)	1.4	2.1	2.0	1.9	2.1	1.8
$T_{V/L=20}$ (^{o}F)	126.3	118.1	117.2	118.9	120.1	121.6
RON						
MON						
(R+M)/2						

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	861975	861976	861977	861978	861979	861980	861969	861970	861971	861972	861973	861974
Date	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09
Dry Vapor Pressure Equivalent (psi)	11.86	12.94	12.83	12.78	12.55	12.16	11.56	12.65	12.71	12.67	12.46	12.15
Specific Gravity	0.7374	0.7413	0.7428	0.7442	0.7472	0.7529	0.7284	0.7332	0.7355	0.7372	0.7403	0.7466
Ethanol (Vol%)	0.00	10.02	12.57	14.89	20.27	30.38	0.00	10.16	12.78	15.11	21.00	30.40
Ethanol (Wt%)	0.00	10.73	13.43	15.88	21.54	32.04	0.00	11.01	13.80	16.27	22.52	32.32
Distillation, D86 (^{o}F)												
IBP	82.3	85.8	84.2	86.4	86.5	88.8	85.3	86.4	90.5	89.1	92.1	90.1
1	85.1	88.0	87.6	89.7	87.0	92.6	88.0	88.7	92.9	92.0	95.2	90.5
2	87.9	90.1	91.1	93.0	87.6	96.4	90.8	91.0	95.3	94.9	98.4	90.8
3	90.8	94.1	94.5	96.4	93.2	100.3	93.7	93.3	97.8	97.8	102.4	93.7
4	94.3	97.8	97.8	99.7	99.1	104.2	97.1	95.7	100.5	100.7	106.0	100.7
5	97.4	100.3	100.8	102.1	102.3	106.8	99.6	98.1	102.6	103.3	109.3	103.5
6	100.0	102.5	103.3	104.7	104.7	109.6	102.0	100.3	104.3	105.0	112.1	106.1
7	102.4	104.6	105.3	106.8	106.9	112.2	104.0	102.3	105.9	106.6	114.4	108.3
8	104.6	106.6	107.3	108.9	109.1	114.5	105.8	104.2	107.6	108.2	116.3	110.4
9	107.0	108.4	109.3	110.6	111.1	116.6	107.6	105.9	109.0	109.7	117.9	112.2
10	109.2	110.1	111.2	112.4	113.1	118.7	109.6	107.4	110.4	111.2	119.4	113.8
11	111.2	111.8	113.1	114.1	115.0	121.0	111.3	108.9	111.7	112.8	121.0	115.2
12	113.2	113.3	114.8	116.0	116.8	122.8	113.0	110.4	113.1	114.1	122.3	117.1
13	115.3	114.9	116.6	117.8	118.4	124.8	114.5	111.9	114.3	115.4	123.5	118.8
14	117.5	116.5	118.3	119.7	120.2	127.3	116.4	113.3	115.6	116.7	124.7	120.4
15	119.7	118.3	120.2	121.3	122.3	129.1	118.2	114.6	116.9	118.1	125.9	122.1
16	122.0	120.0	121.9	123.1	124.1	131.3	120.0	116.0	118.1	119.6	127.0	123.8
17	124.2	121.4	123.5	124.7	126.1	133.4	121.9	117.4	119.5	120.8	128.0	125.2
18	126.5	123.1	125.3	126.8	128.1	135.4	123.6	118.7	120.7	122.2	129.0	126.9
19	129.2	125.0	127.0	128.6	130.0	137.3	125.4	120.0	122.0	123.5	130.0	128.5
20	131.9	126.7	128.8	130.3	132.1	139.5	127.0	121.4	123.4	124.7	130.7	130.0
21	134.5	128.5	130.7	132.1	134.0	141.4	128.8	122.8	124.8	126.2	131.7	131.9
22	137.1	130.4	132.7	133.8	135.9	143.2	130.8	124.0	126.0	127.5	132.8	133.6
23	140.0	132.2	134.6	135.6	137.8	144.9	132.6	125.1	127.1	128.7	133.8	135.2
24	143.3	133.9	136.5	137.3	139.6	146.7	134.6	126.5	128.6	130.2	134.7	136.6
25	146.4	135.6	138.2	139.1	141.4	148.4	136.7	127.9	130.2	131.7	135.7	138.1
26	149.4	137.3	139.8	141.0	143.1	149.4	138.8	129.2	131.5	133.0	136.6	139.7
27	152.7	139.1	141.6	142.4	144.9	151.2	140.6	130.5	132.6	134.4	137.4	141.1
28	155.9	140.6	143.2	143.8	146.5	152.6	142.7	131.9	133.8	135.7	138.8	142.5
29	159.2	142.2	144.8	145.6	148.1	153.7	144.8	133.3	135.0	137.0	140.3	143.6
30	162.8	143.7	146.2	147.0	149.5	154.8	146.9	134.6	136.4	138.3	141.5	144.9
31	165.8	145.1	147.6	148.4	150.7	156.0	149.0	135.8	137.7	139.5	142.3	146.1
32	169.3	146.5	149.1	149.9	151.9	157.1	151.4	137.1	138.8	140.6	143.3	147.4
33	173.0	148.0	150.5	151.0	153.1	158.2	153.6	138.4	139.8	141.6	144.3	148.5
34	176.8	149.3	151.9	152.3	154.2	159.1	155.8	139.5	141.0	142.7	145.3	149.5
35	180.2	150.4	153.0	153.4	155.2	159.9	158.2	140.8	142.0	143.8	146.2	150.7
36	183.8	151.5	154.0	154.4	156.3	160.7	160.6	141.9	143.0	144.9	145.9	151.7
37	187.4	152.7	155.0	155.4	157.2	161.3	162.8	142.9	144.2	146.1	146.3	152.8
38	190.6	153.7	156.1	156.5	158.0	162.0	165.1	144.0	145.4	147.1	147.8	153.8
39	194.3	154.7	157.3	157.6	158.8	162.7	167.4	145.1	146.4	148.1	148.9	154.6
40	198.0	155.8	158.3	158.4	159.2	163.2	169.9	146.2	147.3	148.9	149.7	155.3
41	201.5	156.6	158.9	159.2	160.0	163.7	172.2	147.2	148.2	149.8	150.7	156.2
42	204.8	157.7	159.4	160.0	161.1	164.2	174.9	148.1	149.1	150.8	151.6	157.2
43	207.9	158.5	160.5	160.7	161.9	164.6	177.7	149.1	150.0	151.7	152.5	158.3
44	210.4	159.1	161.7	161.4	162.5	165.0	180.2	150.0	150.8	152.5	153.4	158.9
45	213.3	159.9	162.2	162.0	163.0	165.4	182.8	151.0	151.7	153.4	154.2	159.6
46	215.5	161.4	163.1	162.7	163.4	165.8	185.7	152.0	152.7	154.3	155.1	160.3
47	217.7	164.1	163.9	163.3	163.9	166.2	188.2	152.8	153.4	154.9	156.1	160.9
48	219.9	166.9	164.5	163.8	164.4	166.5	190.9	153.6	154.2	155.7	156.8	161.5
49	221.9	171.7	165.5	164.2	164.7	166.7	193.9	154.5	155.1	156.4	157.6	162.1
50	224.2	180.5	167.3	165.4	164.9	167.1	196.7	155.1	155.9	157.2	158.3	162.8
51	225.7	191.4	168.5	166.3	165.4	167.4	199.2	156.2	156.5	158.0	159.0	163.3
52	227.8	202.0	171.1	166.8	165.8	167.7	202.1	157.6	157.1	158.5	159.6	163.7
53	229.6	210.4	175.8	166.8	166.2	167.8	204.7	159.8	158.0	159.0	160.3	164.2
54	231.0	216.2	184.0	168.5	166.7	168.1	207.8	163.2	158.4	159.6	161.0	164.6

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	861975	861976	861977	861978	861979	861980	861969	861970	861971	861972	861973	861974
Date	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09
Distillation, D86 (^{o}F)												
55	232.7	220.6	196.0	166.9	166.9	168.3	210.5	167.6	159.0	160.2	161.6	165.2
56	234.4	224.0	208.7	170.7	167.1	168.4	213.4	174.2	159.6	160.6	162.1	165.6
57	235.6	226.8	218.2	176.9	167.6	168.6	216.2	183.4	159.8	161.1	162.7	166.0
58	237.0	229.4	223.4	189.8	168.0	168.8	219.1	192.6	162.2	161.8	163.2	166.5
59	238.1	231.2	226.5	206.9	168.3	169.0	222.1	200.6	165.6	162.2	163.8	166.8
60	239.6	233.4	230.1	219.5	168.4	169.2	224.5	207.5	171.1	162.5	164.3	167.1
61	241.3	236.2	233.5	225.5	168.6	169.3	226.8	212.8	181.6	163.1	164.9	167.4
62	242.5	238.5	235.6	229.7	169.3	169.7	229.7	217.6	197.1	163.7	165.3	167.7
63	243.8	239.9	237.8	232.9	170.7	169.9	232.4	221.7	208.3	167.3	165.8	168.0
64	245.2	241.0	240.9	235.4	171.3	170.2	235.0	225.1	215.7	177.8	166.4	168.4
65	246.5	242.5	243.1	237.2	175.7	170.6	238.1	228.6	221.2	197.7	166.9	168.8
66	248.1	243.8	243.7	238.3	197.3	171.1	241.1	232.2	225.5	214.2	167.5	168.9
67	250.0	244.8	243.6	240.2	221.3	170.7	243.7	235.2	229.1	222.2	168.4	169.2
68	251.6	246.0	243.7	242.6	231.8	170.3	246.2	237.4	233.4	227.4	169.1	169.5
69	252.8	247.4	245.3	245.0	235.8	171.0	249.0	239.7	236.9	232.7	169.7	170.0
70	254.8	248.7	248.6	247.6	239.6	171.7	251.6	242.6	239.6	237.1	176.6	170.3
71	256.8	250.3	251.9	249.6	243.3	172.1	254.1	246.1	243.3	240.9	185.0	170.4
72	259.1	252.8	254.4	251.8	246.5	173.3	257.1	249.8	246.6	244.8	205.0	170.7
73	261.0	255.3	256.2	253.1	249.5	174.2	259.7	253.4	249.6	248.9	225.1	171.1
74	263.0	257.4	257.6	253.6	252.3	173.5	262.4	256.6	251.8	252.6	234.8	171.4
75	265.0	259.8	259.8	255.8	254.5	173.2	265.3	259.8	254.6	255.2	241.1	171.7
76	267.6	262.6	262.4	259.2	255.9	185.2	268.4	262.9	258.3	256.7	246.2	172.0
77	270.3	265.1	264.8	261.9	258.0	231.4	271.9	261.5	262.6	258.2	250.5	172.3
78	273.1	267.8	267.4	263.9	260.6	244.5	275.0	260.9	266.3	262.1	254.4	172.6
79	275.6	270.6	269.9	265.8	262.2	248.8	278.1	267.3	268.9	266.9	259.1	173.0
80	279.0	273.3	272.3	269.2	263.9	254.5	281.7	274.5	270.4	272.1	264.2	195.2
81	282.2	276.4	275.3	272.3	267.6	259.7	285.2	279.7	274.8	277.0	269.3	247.4
82	285.2	279.2	278.7	275.7	271.7	264.7	288.8	283.4	279.7	281.4	272.8	257.1
83	288.7	282.5	282.2	279.5	275.7	269.1	292.5	286.5	283.4	285.4	275.0	260.4
84	292.4	286.2	285.7	284.0	279.1	273.0	296.2	290.6	287.0	288.9	278.8	266.7
85	296.5	289.7	289.5	287.6	282.4	277.2	300.1	295.2	291.1	292.8	283.8	274.0
86	300.1	293.7	293.5	290.8	286.4	281.3	304.5	299.4	295.2	297.1	288.8	279.9
87	304.1	298.2	297.8	295.4	291.3	285.7	306.8	303.6	299.5	301.5	293.3	285.3
88	307.7	302.8	302.4	300.2	296.7	290.2	308.4	307.9	304.3	306.3	298.5	290.9
89	312.0	307.3	307.1	305.1	302.3	293.9	315.5	311.9	308.4	311.7	303.9	296.2
90	315.4	312.0	312.0	310.4	307.4	299.2	320.3	314.2	312.7	316.6	309.2	301.9
91	319.4	315.9	315.6	315.3	311.1	305.7	324.9	318.7	319.2	320.9	315.0	307.7
92	325.4	322.1	321.1	318.0	316.7	312.7	330.4	326.6	325.0	326.1	320.7	313.4
93	330.4	328.5	327.6	325.1	323.5	318.3	336.0	333.6	329.6	333.1	326.3	319.0
94	336.3	334.3	333.5	331.8	329.8	325.0	340.6	340.7	333.9	340.0	332.1	325.7
95	342.5	340.5	339.9	338.2	334.8	332.2	346.2	348.4	341.6	348.4	338.7	334.2
96	350.3	347.6	346.8	344.7	342.3	340.3	354.4	355.1	351.2	358.3	347.9	343.4
97	361.9	356.9	355.9	354.2	353.2	351.1	366.7	366.8	363.2	371.8	359.4	354.1
98		372.2	372.1	371.0	368.7		383.1			382.6	376.8	370.2
99												
FBP	390.6	381.1	380.7	382.7	378.6	380.2	395.4	386.7	389.8	385.8	385.6	384.3
Recovered (%)	97.5	97.9	97.2	97.4	97.9	97.6	97.6	96.1	97.6	96.3	97.9	97.9
Residue (%)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.0	1.0	1.0	0.8
Loss (%)	1.5	1.1	1.8	1.6	1.1	1.4	1.4	2.6	1.4	2.7	1.1	1.3
$T_{V/L=20}$ (^{o}F)	124.9	113.9	115.3	115.6	115.6	119.8	123.8	113.5	114.7	113.5	115.6	118.2
RON												
MON												
(R+M)/2												

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	861987	861988	861989	861990	861991	861992	861981	861982	861983	861984	861985	861986
Date	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09
Dry Vapor Pressure Equivalent (psi)	11.67	12.78	12.59	12.52	12.35	11.92	11.59	12.71	12.65	12.40	12.24	11.85
Specific Gravity	0.7292	0.7345	0.7342	0.7378	0.7409	0.7473	0.7295	0.7352	0.7365	0.7382	0.7412	0.7478
Ethanol (Vol%)	0.00	10.20	12.64	15.16	20.43	30.78	0.00	10.10	12.55	15.07	20.43	30.61
Ethanol (Wt%)	0.00	11.02	13.67	16.31	21.89	32.70	0.00	10.91	13.53	16.21	21.89	32.50
Distillation, D86 (^{o}F)												
IBP	85.4	88.6	85.0	90.0	87.7	87.8	85.6	88.4	84.0	86.2	88.9	90.1
1	89.4	90.5	87.5	92.7	90.6	92.9	89.3	90.2	87.6	89.3	92.8	93.7
2	93.5	92.4	90.0	95.3	93.5	98.0	93.1	92.0	91.3	92.3	96.8	97.3
3	97.2	94.4	92.5	98.0	96.3	103.0	96.5	93.7	95.0	95.4	100.2	100.8
4	100.3	96.3	95.1	100.7	99.1	106.5	99.6	95.5	98.8	98.2	102.7	103.7
5	103.3	98.2	97.9	103.9	101.6	109.6	102.1	97.4	101.8	100.8	105.1	106.3
6	106.0	101.1	100.8	108.0	104.4	112.6	104.4	100.4	103.9	103.2	107.2	108.7
7	108.5	104.3	103.4	110.9	106.7	114.7	106.5	102.5	105.7	105.3	109.0	110.9
8	111.0	106.7	105.7	113.5	109.2	116.6	108.5	104.1	107.3	106.9	110.7	112.7
9	113.3	109.2	107.5	115.7	111.6	119.0	110.4	105.7	108.9	108.6	112.3	114.7
10	115.7	110.9	109.1	117.8	113.5	121.5	112.2	107.4	110.7	110.5	114.0	116.3
11	118.0	112.8	111.0	119.8	115.4	123.3	114.0	109.0	112.2	112.3	115.6	118.2
12	120.5	114.5	113.1	121.6	117.6	125.5	115.7	110.6	113.6	113.8	117.1	120.2
13	123.0	116.4	115.0	123.6	119.7	127.5	117.5	112.1	115.0	115.3	118.5	121.7
14	125.3	118.4	116.8	125.6	121.7	129.8	119.4	113.4	116.4	116.8	119.9	123.5
15	127.7	120.1	119.1	127.3	123.9	131.8	121.1	114.7	117.9	118.4	121.5	125.1
16	130.4	122.1	121.1	129.0	125.9	133.8	122.7	116.0	119.3	119.7	123.0	126.7
17	133.2	123.8	122.8	130.6	127.8	136.0	124.6	117.3	120.6	121.1	124.4	128.5
18	136.1	125.7	124.7	132.4	130.0	138.2	126.4	118.6	121.9	122.6	125.9	130.3
19	138.9	127.3	126.7	134.0	132.1	140.1	128.2	120.0	123.2	123.9	127.5	132.1
20	141.8	129.2	128.6	135.7	133.7	142.0	130.4	121.4	124.6	125.4	129.0	133.7
21	145.1	131.2	130.5	137.5	135.7	143.6	132.4	122.9	126.1	126.9	130.5	135.2
22	148.1	132.8	132.4	139.2	137.4	145.2	134.3	124.3	127.7	128.6	132.0	136.6
23	151.1	134.5	134.0	140.6	139.2	147.0	136.5	125.6	129.2	130.1	133.3	138.1
24	154.0	136.2	135.7	142.3	141.3	148.5	138.5	126.8	130.4	131.4	134.8	139.6
25	157.0	137.9	137.6	143.7	143.1	149.9	140.5	128.2	131.6	132.7	136.1	140.9
26	160.2	139.8	139.3	145.1	144.6	151.3	142.7	129.5	132.9	134.1	137.4	142.2
27	163.5	141.5	141.0	146.7	146.0	152.7	144.9	130.7	134.2	135.6	138.7	143.5
28	166.8	142.8	142.7	148.0	147.6	153.8	147.2	132.1	135.7	136.6	140.1	144.8
29	170.2	144.0	144.3	149.0	148.9	154.8	149.2	133.5	137.0	137.9	141.5	146.1
30	173.5	145.5	146.0	150.2	150.3	155.8	151.5	134.5	138.1	139.2	142.6	147.3
31	176.8	146.9	147.5	151.5	151.3	156.7	154.1	135.8	139.3	140.6	143.8	148.4
32	180.2	148.4	148.8	152.4	152.2	157.6	156.2	136.9	140.6	141.6	145.0	149.4
33	183.5	149.5	150.1	153.4	153.5	158.3	158.5	137.9	141.7	142.6	146.1	150.4
34	186.9	150.7	151.4	154.4	154.6	159.0	160.7	139.2	142.8	143.7	147.2	151.4
35	189.8	151.6	152.4	155.4	155.4	159.8	162.8	140.5	143.8	144.9	148.1	152.5
36	192.8	153.2	153.2	156.3	156.2	160.5	165.3	141.4	144.8	146.1	149.2	153.4
37	195.7	154.2	154.1	157.1	157.1	161.2	167.9	142.7	145.5	147.0	150.2	154.3
38	198.6	154.9	155.0	157.9	157.8	161.6	170.3	143.7	146.3	148.0	151.1	155.0
39	201.3	155.8	156.0	158.5	158.4	162.0	172.7	144.9	146.8	149.1	152.1	155.9
40	203.6	156.6	156.7	159.1	159.0	162.4	175.1	145.7	148.0	149.8	153.0	156.8
41	206.3	157.7	157.3	159.8	159.8	162.8	177.5	146.8	149.5	150.8	153.8	157.5
42	208.6	158.5	158.0	160.3	160.4	163.3	179.8	147.8	150.4	151.7	154.7	158.1
43	210.6	158.9	158.7	161.0	160.8	163.9	182.4	148.7	151.2	152.6	155.5	158.5
44	212.9	160.4	159.3	161.4	161.3	163.7	185.3	149.4	152.2	153.3	156.3	159.6
45	214.8	162.0	159.8	162.0	161.5	164.2	188.2	150.6	153.1	154.0	157.0	160.2
46	216.8	163.1	160.4	162.8	162.0	164.7	191.0	151.4	153.9	154.9	157.7	160.9
47	218.3	166.1	161.1	163.0	162.5	165.3	193.4	152.0	154.4	155.6	158.4	161.5
48	220.0	171.4	161.4	163.3	162.9	165.4	196.0	152.5	155.1	156.5	159.0	162.0
49	221.7	179.2	161.6	163.7	163.3	165.1	198.8	153.5	156.0	157.2	159.6	162.6
50	223.1	188.6	163.1	164.2	163.8	165.6	201.2	154.2	156.7	157.9	160.3	163.1
51	224.6	198.6	165.3	164.8	164.1	166.1	203.7	154.9	157.2	158.3	160.8	163.5
52	226.0	206.4	167.0	166.6	164.5	166.5	206.8	156.5	158.1	158.9	161.5	164.0
53	227.2	211.9	171.6	168.5	164.8	166.5	209.5	158.9	158.7	159.6	162.1	164.4
54	228.3	216.0	183.4	170.3	165.0	166.8	211.8	162.6	159.3	160.3	162.6	164.7

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	861987	861988	861989	861990	861991	861992	861981	861982	861983	861984	861985	861986
Date	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09	3/13/09	3/20/09	3/20/09	3/20/09	3/20/09	3/20/09
Distillation, D86 (^{o}F)												
55	229.6	218.4	197.7	171.3	165.1	167.2	214.7	168.6	159.7	161.1	163.1	165.2
56	231.1	220.9	208.7	176.0	165.3	167.3	217.2	177.5	160.2	161.6	163.6	165.7
57	232.2	221.7	215.6	188.3	166.1	167.2	219.4	187.5	161.3	162.1	164.1	166.1
58	233.3	223.3	219.6	204.9	166.3	167.6	222.1	195.9	163.6	162.7	164.5	166.5
59	234.6	226.1	222.2	217.0	166.4	167.9	224.8	202.6	167.4	163.4	164.9	166.8
60	236.2	228.8	224.8	222.6	166.9	168.0	226.8	208.0	178.0	164.5	165.3	167.2
61	237.4	231.6	227.4	225.3	167.8	168.3	229.1	212.3	192.8	165.3	166.0	167.5
62	238.6	231.4	229.5	227.7	168.2	168.6	231.6	216.1	205.1	166.0	166.4	167.8
63	240.0	231.7	231.1	229.9	168.4	168.8	234.3	219.8	214.0	168.5	166.9	168.0
64	241.3	230.7	231.9	232.1	170.6	168.6	236.4	223.3	218.6	180.5	167.5	168.3
65	242.5	232.5	233.2	233.7	181.0	168.7	238.3	226.4	222.8	200.1	168.2	168.6
66	243.8	236.9	235.7	235.9	205.6	168.9	241.0	228.9	226.6	214.6	168.9	169.0
67	245.1	238.8	238.1	238.4	222.0	169.2	243.2	232.4	230.1	221.7	170.1	169.3
68	246.7	233.0	240.2	240.6	228.0	169.7	245.4	235.2	232.9	226.8	172.1	169.5
69	248.1	236.9	241.4	242.7	231.4	169.5	247.9	237.8	235.7	231.4	175.3	169.7
70	249.5	242.4	239.7	244.6	233.4	170.0	250.7	241.1	238.0	235.0	190.4	170.0
71	251.4	245.5	239.2	245.2	235.6	170.6	253.1	244.2	240.8	238.5	216.6	170.3
72	253.4	248.0	242.8	244.1	239.1	169.9	255.5	246.3	245.2	241.9	231.1	170.6
73	255.2	249.8	247.0	244.9	242.2	170.9	258.7	248.6	249.3	244.9	237.0	171.0
74	257.2	247.5	250.3	248.7	244.6	171.7	261.5	251.4	252.8	248.5	241.8	171.0
75	259.2	245.6	252.4	251.8	247.2	172.2	264.4	253.9	255.2	252.4	246.3	171.4
76	261.5	250.8	253.7	253.7	249.8	172.6	267.7	257.5	256.7	255.6	250.2	171.8
77	264.2	255.5	254.8	254.3	252.0	182.2	270.6	261.2	259.5	257.5	253.4	172.4
78	267.3	259.4	255.9	257.2	253.5	231.0	273.3	263.0	263.0	260.2	257.0	172.5
79	270.0	262.9	258.0	261.7	254.3	242.2	276.4	264.9	266.4	263.2	260.7	173.7
80	273.1	266.0	261.4	265.6	255.9	246.8	279.5	267.7	270.4	266.6	264.5	196.1
81	276.6	269.6	265.1	269.6	259.6	250.4	282.5	273.3	273.9	270.9	268.7	248.0
82	280.1	272.6	269.0	273.0	263.3	255.2	286.6	278.7	276.3	275.9	272.6	256.8
83	284.3	276.1	273.1	276.3	266.6	260.0	290.3	282.9	275.5	279.5	277.0	262.9
84	288.8	279.7	277.2	280.6	268.7	265.1	294.4	286.8	281.8	279.8	281.4	269.4
85	293.7	284.1	281.9	286.2	273.5	270.2	298.2	290.9	289.3	282.7	285.3	275.3
86	298.1	289.0	287.0	292.0	279.9	275.0	301.5	295.1	294.7	289.6	289.1	280.5
87	302.9	294.7	292.5	297.7	285.9	280.5	305.6	298.9	299.1	296.6	294.3	285.5
88	308.3	300.6	298.3	303.9	292.8	285.7	309.8	302.9	304.0	301.5	299.8	291.2
89	313.5	306.7	304.5	310.7	299.1	292.2	313.2	305.9	308.9	305.9	304.5	296.3
90	317.7	313.2	310.9	316.8	306.5	298.6	316.9	308.8	313.9	310.8	309.3	300.4
91	323.6	319.4	317.5	321.9	313.6	303.1	323.0	317.2	318.2	315.9	314.9	306.6
92	329.6	324.6	323.6	326.6	319.2	312.5	329.3	324.0	321.1	320.3	319.6	313.2
93	334.5	329.0	328.4	334.6	323.7	319.6	335.1	329.4	327.4	324.0	324.0	319.1
94	338.8	334.4	332.6	341.0	330.7	325.3	340.5	334.6	335.5	331.0	330.2	325.8
95	343.3	340.2	337.9	348.2	336.3	332.6	346.7	338.6	342.2	338.7	338.5	333.1
96	349.9	347.3	345.1	358.9	343.3	340.3	353.6	348.6	350.4	346.6	347.5	340.1
97	359.9	356.5	353.7		351.7	348.9	362.6	361.3	359.1	357.3	356.5	350.0
98	377.0	373.0	367.7		363.5	363.1	377.3			370.8	369.6	364.1
99												
FBP	388.5	379.3	383.1	376.5	376.1	369.7	388.4	387.9	384.6	379.7	383.5	380.0
Recovered (%)	97.9	96.1	96.4	96.3	96.9	97.4	98.1	96.2	97.5	97.4	97.9	98.0
Residue (%)	1.0	1.0	1.0	1.0	1.0	1.0	0.8	1.0	1.0	0.9	0.9	0.7
Loss (%)	1.1	2.9	2.6	2.7	2.1	1.6	1.1	2.8	1.5	1.7	1.2	1.3
$T_{V/L=20}$ (^{o}F)	130.1	115.1	116.7	116.3	118.6	122.1	126.5	114.0	115.4	114.5	117.1	120.0
RON												
MON												
(R+M)/2												

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856521	856522	856523	856524	856525	856526	856515	856516	856517	856518	856519	856520
Date	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09
Dry Vapor Pressure Equivalent (psi)	11.64	12.75	12.41	12.53	12.33	11.84	12.35	13.53	13.44	13.31	13.14	12.64
Specific Gravity	0.7317	0.7374	0.7388	0.7335	0.7364	0.7497	0.7289	0.7349	0.7364	0.7380	0.7413	0.7478
Ethanol (Vol%)	0.00	10.02	12.36	14.97	20.05	27.62	0.00	10.29	12.72	15.32	20.46	27.93
Ethanol (Wt%)	0.00	10.79	13.28	16.20	21.62	29.25	0.00	11.12	13.71	16.48	21.91	29.65
Distillation, D86 (^{o}F)												
IBP	81.1	83.3	83.4	86.3	87.0	87.8	79.6	81.5	82.5	82.1	82.9	85.5
1	84.0	86.6	86.8	90.0	90.3	91.5	83.2	82.1	85.3	87.0	86.4	89.6
2	86.9	90.0	90.3	93.7	93.6	95.1	86.7	83.5	88.0	91.8	89.8	93.8
3	89.8	93.3	93.7	97.3	96.9	98.7	90.2	90.9	91.1	95.1	93.3	97.9
4	93.3	96.9	97.4	101.1	100.2	102.4	93.5	93.5	94.8	97.8	96.0	101.6
5	97.4	100.7	100.9	104.6	104.3	106.9	95.8	95.9	96.9	99.8	98.7	104.3
6	100.7	103.8	103.8	107.6	107.5	110.9	97.8	97.9	99.1	101.7	100.7	106.5
7	103.7	106.6	106.5	110.3	110.4	113.9	99.7	99.8	101.4	103.2	102.6	108.6
8	106.7	109.1	108.9	112.7	112.6	117.2	101.4	101.2	102.9	104.8	104.5	110.8
9	109.8	111.4	111.3	115.0	115.7	120.4	103.3	102.9	104.5	106.4	106.2	112.6
10	112.6	113.5	113.6	117.1	117.8	122.9	105.0	104.3	105.6	107.9	107.8	114.3
11	115.2	115.7	115.7	119.1	119.7	125.1	106.6	105.5	107.0	109.2	109.3	116.1
12	117.9	118.1	117.9	121.4	122.4	128.0	108.1	106.9	108.4	110.5	110.9	117.8
13	120.7	120.3	120.1	123.5	124.6	130.7	109.7	108.0	109.8	112.0	112.5	119.5
14	123.5	122.0	122.1	125.4	126.9	133.0	111.1	109.5	111.4	113.0	113.8	121.2
15	126.4	124.0	124.5	127.5	129.4	135.6	112.8	110.8	112.8	114.6	115.2	122.8
16	129.5	126.3	127.2	130.0	131.6	137.9	114.4	112.4	114.1	116.2	116.9	124.5
17	132.8	128.4	129.6	132.1	133.5	140.2	116.3	113.5	115.5	117.5	118.5	126.3
18	136.0	130.4	131.8	134.2	136.0	142.3	118.2	115.0	116.8	119.0	119.9	127.8
19	139.6	132.3	133.8	136.2	138.4	144.3	119.7	116.4	118.2	120.4	121.4	129.5
20	143.5	134.5	135.9	138.2	140.5	146.0	121.3	117.8	119.5	121.9	122.8	131.0
21	147.4	136.7	138.3	140.2	142.4	147.8	123.2	119.1	120.9	123.4	124.5	132.7
22	151.2	138.8	140.5	141.9	143.9	149.4	125.1	120.3	122.3	124.8	125.8	134.0
23	155.0	140.6	142.4	143.6	145.8	150.8	127.0	121.9	123.6	126.1	127.3	135.3
24	159.1	142.3	144.1	145.4	147.5	152.1	128.8	123.3	125.2	127.7	129.0	136.7
25	163.3	143.9	145.7	146.9	148.9	153.5	130.7	124.6	126.6	129.0	130.6	138.5
26	167.7	145.6	147.5	148.3	150.1	154.7	132.6	126.0	127.8	130.6	132.0	139.6
27	171.8	147.1	149.1	149.7	151.5	155.6	134.5	127.2	129.1	131.9	133.5	140.9
28	176.0	148.3	150.3	150.9	152.9	156.6	136.4	128.4	130.6	133.2	134.9	142.8
29	180.2	149.7	151.7	152.1	154.0	157.8	138.4	129.7	131.8	134.5	136.3	144.4
30	184.4	151.0	152.9	153.1	155.0	158.6	140.6	131.0	133.1	135.8	137.4	145.7
31	188.1	152.1	153.7	154.3	156.0	159.5	142.7	132.5	134.5	137.1	138.8	146.9
32	191.7	153.2	154.6	155.3	156.8	160.1	145.0	133.8	135.8	138.4	140.5	148.2
33	195.4	154.1	155.6	156.2	157.8	160.3	147.1	135.4	137.1	139.7	141.3	149.4
34	198.8	155.0	156.5	157.0	158.5	161.0	149.7	136.4	138.3	140.8	142.7	150.7
35	201.8	155.8	157.2	157.7	159.1	161.6	152.0	137.8	139.6	142.3	144.0	151.9
36	204.8	156.7	157.9	158.5	159.8	162.1	154.4	139.0	140.9	143.4	144.8	153.0
37	207.5	157.5	158.6	159.3	160.3	162.5	156.9	140.2	142.1	144.4	146.1	154.3
38	210.2	158.4	159.2	159.9	160.8	162.9	159.0	141.4	143.2	145.4	147.1	155.4
39	212.3	159.2	159.8	160.3	161.5	163.4	161.3	142.5	144.2	146.4	148.6	156.5
40	214.3	160.1	160.5	160.8	161.8	163.6	164.1	143.6	145.2	147.5	149.2	157.2
41	216.3	161.4	161.0	161.5	162.4	163.7	166.8	144.7	146.3	148.7	150.5	158.0
42	218.2	162.4	161.6	162.1	162.7	163.7	169.4	145.8	147.1	149.7	151.6	158.8
43	219.8	164.4	162.0	162.5	163.0	164.5	172.2	146.7	148.0	149.9	152.8	159.5
44	221.4	169.0	162.3	162.8	163.4	165.0	175.0	146.9	149.0	151.1	153.6	160.3
45	222.8	176.6	163.9	163.3	163.8	165.1	177.5	148.0	150.0	152.4	154.4	160.9
46	224.0	186.3	166.4	163.7	164.0	165.3	180.4	149.5	151.2	153.6	155.5	161.7
47	224.9	196.5	168.9	164.0	164.0	165.6	183.8	150.4	152.3	154.5	156.4	162.4
48	226.4	205.2	172.4	164.2	164.5	165.8	186.5	151.2	153.2	155.4	157.3	163.0
49	227.8	211.6	177.7	164.6	164.8	166.0	189.8	152.1	154.1	156.3	158.0	163.6
50	228.9	216.3	187.6	165.2	165.3	166.3	192.7	152.8	154.9	157.2	158.8	164.1
51	230.3	220.2	201.7	166.1	165.2	166.4	195.6	153.4	155.7	157.9	159.6	164.6
52	231.6	223.0	212.7	167.8	165.7	166.6	198.6	154.2	156.6	158.5	160.3	165.2
53	232.7	225.0	218.9	171.5	166.0	166.8	201.5	155.1	157.3	159.0	161.1	165.5
54	233.8	226.7	222.7	180.4	166.1	166.8	205.4	156.3	158.0	159.6	161.6	166.1

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856521	856522	856523	856524	856525	856526	856515	856516	856517	856518	856519	856520
Date	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09
Distillation, D86 (^{o}F)												
55	234.8	228.2	225.4	194.1	166.5	166.9	208.4	157.9	158.5	160.4	162.3	166.2
56	235.8	230.0	228.1	208.1	166.4	167.4	211.8	159.8	159.3	161.1	162.7	166.8
57	236.7	231.9	229.4	218.4	166.7	167.5	215.1	163.8	160.0	161.6	163.2	167.4
58	237.9	233.8	229.9	223.6	167.1	167.5	218.8	171.5	160.4	162.1	163.7	167.8
59	239.2	235.3	231.0	226.3	167.5	167.5	221.7	184.2	161.3	162.5	164.4	168.2
60	240.5	236.3	232.9	228.5	168.3	167.9	225.5	195.4	162.3	163.1	164.7	168.6
61	241.8	237.6	235.1	231.0	168.9	168.1	229.1	205.1	165.2	163.7	165.4	168.8
62	242.9	238.7	236.9	233.7	173.0	168.3	232.8	209.4	175.2	164.1	165.7	169.2
63	244.0	239.3	238.6	235.7	193.9	168.4	236.0	216.2	192.6	165.8	166.3	169.5
64	245.1	239.2	238.8	237.3	218.8	169.0	239.2	224.6	208.2	168.4	166.8	169.8
65	246.4	239.1	238.0	238.9	227.8	169.4	243.0	230.2	219.6	175.2	167.1	170.2
66	247.9	240.9	239.5	240.7	230.8	169.8	247.1	235.1	227.3	193.7	167.4	170.5
67	249.5	243.7	242.2	242.7	233.4	169.9	250.5	238.9	232.2	212.3	168.1	170.7
68	251.1	245.7	244.2	244.3	236.2	169.3	253.4	241.9	236.6	225.7	168.9	171.1
69	252.8	247.2	245.9	244.1	238.3	169.5	257.2	243.9	240.5	235.6	169.1	171.4
70	254.4	249.2	247.8	244.7	241.0	169.9	260.4	246.5	244.4	243.4	169.1	171.7
71	256.0	251.3	249.8	247.4	243.6	169.9	264.2	250.6	249.5	248.5	174.0	172.0
72	257.7	253.0	251.6	248.1	245.5	170.4	268.3	255.4	254.6	251.8	216.4	172.2
73	259.5	254.1	253.5	248.1	247.4	170.5	272.4	260.8	260.1	256.5	236.3	172.6
74	261.4	255.7	255.5	250.1	249.4	170.9	275.9	265.1	265.1	261.5	245.2	172.9
75	263.3	257.8	257.6	253.2	252.1	177.3	279.6	269.2	269.3	266.2	251.8	173.0
76	265.6	260.5	259.6	256.7	254.4	226.6	284.0	272.8	272.9	269.6	258.2	173.6
77	268.1	263.6	261.8	259.7	254.0	239.3	288.1	275.5	276.6	270.4	264.0	174.4
78	270.9	266.3	264.2	262.4	255.9	243.4	292.1	278.0	280.5	273.4	269.1	173.8
79	273.9	269.1	266.9	265.0	259.1	248.1	296.5	284.5	284.0	279.0	274.7	175.2
80	277.1	272.0	270.0	267.7	262.6	253.7	299.9	290.3	287.8	284.8	280.7	239.7
81	280.5	274.8	273.3	270.8	265.8	258.3	304.0	295.2	291.6	290.6	285.8	267.5
82	284.4	277.7	277.0	274.4	267.2	262.7	308.3	299.5	294.5	295.8	290.9	276.2
83	288.3	281.3	281.3	278.5	271.0	266.4	312.1	302.2	301.5	300.2	295.2	283.3
84	292.2	286.2	285.5	282.4	276.3	270.3	315.4	305.1	307.1	303.6	299.0	289.2
85	296.3	290.6	290.3	286.6	281.6	274.8	318.6	311.9	311.8	308.3	303.0	295.5
86	300.6	294.6	295.5	291.3	286.1	279.3	317.4	317.0	315.9	313.5	307.3	300.9
87	305.5	298.9	300.6	296.8	291.1	283.6	324.8	321.1	319.9	318.3	310.0	306.0
88	310.6	304.2	305.5	302.9	295.7	287.5	330.4	325.1	323.5	322.7	317.8	311.4
89	315.8	309.6	310.8	308.8	301.0	294.7	334.5	328.0	327.1	325.9	323.6	316.7
90	320.8	314.4	315.9	314.1	308.7	301.4	338.5	330.1	330.4	328.7	327.8	321.3
91	325.9	319.3	320.1	319.1	314.9	307.3	342.9	335.8	336.2	332.0	328.4	326.6
92	329.1	323.6	323.6	324.3	320.3	311.4	346.2	340.8	340.7	338.1	335.5	331.9
93	333.0	328.2	328.8	329.7	325.5	320.3	350.4	346.2	345.7	343.8	341.4	337.8
94	340.0	336.1	335.9	333.8	329.5	327.5	355.5	351.8	351.0	349.8	347.5	342.5
95	345.3	343.0	342.5	339.5	337.5	334.4	361.9	358.5	357.2	356.0	353.5	349.9
96	351.8	350.6	349.5	348.2	344.9	340.3	370.7	365.9	364.2	361.8	359.1	358.7
97	361.8	359.6	359.7	359.8	354.4	351.0	380.5	376.3	372.2	373.1	372.1	370.0
98	378.2	373.7	375.0	376.3	371.3		395.1		388.5	388.8	389.0	385.8
99												
FBP	393.5	385.3	386.9	387.5	383.0	381.1	402.8	398.4	401.2	401.8	398.7	394.5
Recovered (%)	97.2	96.9	97.2	97.1	96.8	96.8	97.4	98.3	97.7	98.1	97.4	97.3
Residue (%)	0.8	0.9	0.8	0.9	0.8	0.9	0.9	0.9	0.8	0.9	0.9	0.9
Loss (%)	2.0	2.2	2.0	2.0	2.4	2.3	1.7	0.8	1.5	1.0	1.7	1.8
$T_{V/L=20}$ (^{o}F)	125.8	116.6	117.0	117.7	119.3	122.9	116.2	109.4	109.8	110.3	111.7	115.0
RON												
MON												
(R+M)/2												

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856545	856546	856547	856548	856549	856550	856539	856540	856541	856542	856543	856544
Date	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09
Dry Vapor Pressure Equivalent (psi)	10.99	11.74	11.87	11.79	11.61	11.28	11.35	12.31	12.24	12.12	11.95	11.60
Specific Gravity	0.7414	0.7461	0.7473	0.7486	0.7513	0.7562	0.7295	0.7353	0.7368	0.7382	0.7414	0.7478
Ethanol (Vol%)	0.00	10.27	12.69	15.24	20.33	29.84	0.00	10.39	12.68	15.10	20.07	30.23
Ethanol (Wt%)	0.00	10.92	13.48	16.17	21.48	31.32	0.00	11.22	13.66	16.24	21.49	32.09
Distillation, D86 (^{o}F)												
IBP	79.7	84.5	84.9	85.5	86.3	88.2	81.9	85.2	84.4	86.1	84.3	86.3
1	82.5	88.7	85.6	90.5	90.1	93.0	86.0	90.7	88.6	91.3	88.5	91.5
2	85.2	92.9	86.3	95.5	93.9	97.9	90.2	95.9	92.8	96.5	92.7	96.7
3	87.9	97.1	93.1	99.7	97.8	102.4	94.1	99.0	96.8	100.5	96.6	101.0
4	91.3	100.7	98.3	103.1	102.9	106.1	97.2	101.4	99.8	103.5	99.8	104.0
5	95.1	103.4	101.7	105.6	105.4	109.0	99.8	103.4	102.1	105.7	102.5	106.3
6	98.2	105.5	104.4	107.8	108.1	111.4	101.9	105.2	104.0	107.5	104.6	108.4
7	101.2	107.7	106.7	109.7	109.9	113.7	103.7	106.7	105.8	109.3	106.5	110.4
8	104.1	109.4	108.6	111.7	112.0	115.7	105.5	107.9	107.3	110.8	108.7	112.1
9	106.6	111.1	110.2	113.6	113.7	117.8	107.2	109.2	108.8	112.2	110.3	113.6
10	108.9	112.7	111.8	115.4	115.6	120.1	108.8	110.4	110.3	113.5	111.8	115.1
11	111.2	114.1	113.3	117.0	117.2	122.2	110.4	111.7	111.7	114.9	113.3	116.9
12	113.0	115.6	114.9	118.5	119.2	124.1	112.1	113.1	112.9	116.1	114.8	118.5
13	115.1	117.2	116.5	120.1	120.6	126.2	113.4	114.3	113.9	117.3	116.3	119.9
14	117.5	118.9	118.5	121.7	122.8	128.2	115.0	115.4	115.0	118.6	117.8	121.4
15	119.8	120.6	120.3	123.5	124.3	130.0	116.7	116.6	116.3	119.6	119.0	122.8
16	122.0	122.0	121.9	125.1	126.3	131.9	118.3	117.7	117.5	120.7	120.3	124.4
17	124.1	123.6	123.3	127.0	128.1	133.7	119.7	118.8	118.7	121.9	121.4	125.8
18	126.3	125.2	125.2	128.8	130.0	135.4	121.3	120.0	119.9	122.9	122.6	127.0
19	128.9	126.8	126.9	130.5	131.7	137.5	122.9	121.2	121.1	124.1	123.9	128.7
20	131.7	128.5	128.8	132.2	133.5	139.3	124.5	122.2	122.3	125.1	125.2	130.5
21	134.3	130.0	130.4	133.9	135.3	140.9	126.0	123.3	123.4	126.4	126.4	132.2
22	136.8	131.5	132.3	135.6	137.1	142.9	127.6	124.6	124.5	127.7	127.8	133.8
23	139.5	133.4	133.7	137.2	138.1	144.7	129.4	125.9	125.7	128.8	129.0	135.4
24	142.4	135.3	135.4	138.7	140.3	146.4	131.1	127.2	126.9	130.0	130.4	136.5
25	145.2	136.7	137.3	139.8	141.8	147.9	132.7	128.2	128.0	131.1	131.7	137.4
26	148.0	137.9	139.0	141.1	143.5	149.3	134.6	129.3	129.1	132.1	132.8	138.8
27	150.9	139.6	140.6	143.1	144.7	150.9	136.4	130.4	130.4	133.3	134.1	140.5
28	153.7	141.4	142.1	144.8	146.2	152.0	138.2	131.4	131.7	134.4	135.3	141.9
29	156.8	142.8	143.5	146.2	147.7	153.2	140.1	132.6	132.7	135.7	136.7	142.9
30	160.3	144.2	145.2	147.5	149.0	154.5	142.0	133.7	133.7	136.9	138.1	144.0
31	163.9	145.6	146.5	148.8	150.5	155.8	144.0	135.0	134.8	137.9	139.3	145.3
32	167.6	146.8	148.1	150.0	151.6	156.9	145.7	135.9	136.0	138.8	140.6	146.2
33	171.2	148.3	149.5	151.5	152.9	157.9	147.8	136.9	137.3	139.9	141.7	147.3
34	174.9	149.8	150.8	152.5	153.8	158.9	149.9	138.1	138.5	141.1	142.7	148.6
35	178.5	151.2	152.1	153.5	155.0	159.7	151.9	139.3	139.5	142.1	143.7	149.8
36	181.9	152.3	153.3	154.7	156.2	160.5	154.2	140.3	140.7	143.2	145.0	150.9
37	185.6	153.3	154.5	155.7	157.3	161.4	156.6	141.2	141.8	144.3	146.0	152.0
38	189.7	154.5	155.3	156.8	158.0	162.1	158.9	141.9	142.7	145.5	146.8	153.0
39	193.7	155.5	156.4	157.8	159.1	162.6	161.1	141.6	143.6	146.6	148.1	154.1
40	197.5	156.4	157.6	158.6	159.8	163.2	163.6	143.4	144.6	147.6	149.1	155.1
41	201.4	157.6	158.7	159.4	160.4	163.8	166.1	144.9	145.7	148.6	150.2	155.9
42	205.3	158.5	159.5	160.0	161.2	164.3	168.5	145.9	146.8	149.4	151.2	156.9
43	208.9	159.1	160.5	160.8	161.8	164.8	171.1	147.2	147.9	150.5	152.1	157.7
44	212.2	160.1	161.3	161.6	162.5	165.1	173.6	148.1	148.8	151.6	152.9	158.6
45	215.4	161.3	162.2	162.3	162.9	165.6	176.3	148.8	149.7	152.4	153.9	159.3
46	218.2	162.7	162.8	162.8	163.3	165.9	179.2	150.3	150.6	153.2	154.9	160.0
47	220.8	164.1	163.5	163.3	164.1	166.2	182.1	151.3	151.5	154.2	155.7	160.9
48	223.3	167.6	164.8	163.9	164.4	166.6	185.0	151.5	152.5	155.2	156.6	161.5
49	225.6	175.0	165.9	164.6	165.0	167.1	188.1	152.4	153.3	156.1	157.3	162.1
50	227.8	186.1	167.4	165.3	165.1	167.6	191.2	153.6	154.3	157.1	157.9	162.6
51	230.0	199.5	170.1	165.7	165.7	168.0	194.2	154.2	155.2	158.0	158.8	163.2
52	232.1	210.9	173.4	166.3	165.9	168.1	197.2	154.9	155.7	158.7	159.5	163.9
53	233.9	218.6	176.0	166.8	166.5	168.1	200.4	155.4	156.5	159.4	160.4	164.4
54	235.6	223.3	183.1	167.7	166.8	168.1	203.9	157.3	157.3	159.9	161.1	164.9

ASTM Class	D	D	D	D	D	D	D	D	D	D	D	D
State	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856545	856546	856547	856548	856549	856550	856539	856540	856541	856542	856543	856544
Date	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09	2/12/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09
Distillation, D86 (^{o}F)												
55	237.4	226.7	199.1	168.2	166.9	168.2	207.2	160.5	157.8	160.4	161.5	165.4
56	238.9	229.9	214.4	172.0	167.3	168.5	210.3	166.5	158.2	160.8	162.1	165.7
57	240.4	233.2	222.2	183.0	167.6	168.8	213.7	175.3	159.0	161.6	162.7	166.1
58	241.9	235.9	224.3	200.3	168.0	169.1	216.8	185.2	159.6	162.4	163.3	166.7
59	243.4	237.6	228.6	216.9	168.7	169.2	220.1	195.3	160.6	163.2	163.8	167.1
60	245.2	238.4	234.5	226.5	169.0	169.3	223.0	203.8	163.8	163.7	164.3	167.5
61	247.0	239.2	238.8	231.4	168.7	169.5	225.8	211.4	172.5	164.2	164.8	167.7
62	248.5	241.4	241.9	235.5	169.2	169.7	228.8	217.4	184.3	165.9	165.1	168.1
63	250.1	243.8	244.3	238.6	169.4	170.0	231.6	221.7	198.3	166.9	165.7	168.4
64	251.6	245.9	246.3	240.7	177.2	170.2	234.6	225.8	210.7	172.7	166.3	168.7
65	253.3	247.5	247.8	242.5	206.8	170.4	237.6	229.5	219.2	189.2	166.7	169.0
66	255.2	249.7	248.9	244.7	229.8	170.6	240.7	232.9	224.4	206.5	167.3	169.2
67	257.1	252.4	249.4	246.4	235.6	170.9	243.9	236.6	228.6	219.2	167.6	169.6
68	258.5	254.9	249.8	248.8	239.1	171.2	246.8	240.2	232.7	227.3	167.8	170.0
69	260.2	257.1	250.9	251.4	242.6	171.5	249.8	243.1	236.8	233.0	169.0	170.2
70	262.3	258.9	252.9	253.8	246.1	171.7	252.3	246.4	240.9	238.0	170.5	170.5
71	264.3	260.2	255.9	255.6	249.9	172.0	255.0	249.5	244.8	241.9	180.3	170.8
72	266.4	261.7	258.9	257.8	253.0	172.4	258.2	252.1	248.3	245.1	210.1	171.1
73	268.8	263.7	261.2	260.5	255.6	172.5	261.3	255.3	251.8	248.4	232.5	171.5
74	271.5	266.3	263.3	263.5	258.3	182.1	264.6	258.1	255.6	252.7	240.6	171.7
75	273.9	268.7	265.8	266.3	261.4	215.1	267.7	262.0	258.3	257.5	247.1	172.0
76	276.6	271.5	268.6	268.9	264.0	246.5	270.5	265.3	260.8	261.9	252.2	172.6
77	279.6	274.8	271.1	271.7	265.7	251.6	273.3	268.5	263.8	265.7	256.6	172.8
78	282.5	277.9	274.2	274.7	267.6	254.9	276.1	271.7	267.5	269.4	260.7	172.6
79	285.5	281.1	277.4	277.6	271.5	259.7	279.7	274.5	271.5	273.1	265.1	173.4
80	288.7	284.5	280.7	280.5	274.8	265.1	283.6	277.7	275.5	276.5	269.3	206.8
81	292.2	288.1	284.1	283.5	276.7	270.3	287.4	282.1	279.6	279.7	273.1	246.1
82	295.4	291.3	287.8	286.8	278.2	274.8	291.6	286.6	283.0	281.4	276.4	262.1
83	298.8	294.9	291.3	291.0	283.2	279.1	295.3	290.6	286.8	283.0	279.6	268.0
84	302.3	298.8	294.5	294.7	288.9	282.3	299.3	294.5	291.4	288.2	282.8	273.1
85	306.0	302.6	298.7	299.0	294.1	285.9	303.2	298.9	295.7	295.0	287.2	278.9
86	309.6	305.9	303.0	303.0	297.9	290.5	307.0	303.9	299.9	300.8	291.8	285.0
87	313.5	308.9	307.1	306.9	301.8	295.3	310.8	308.1	304.3	305.6	297.1	290.5
88	316.3	312.6	311.5	311.3	305.7	300.2	313.8	312.9	309.2	309.9	303.4	294.9
89	318.3	317.3	315.0	315.7	309.3	304.9	319.5	315.8	313.6	314.8	309.2	300.5
90	321.2	321.5	318.9	319.8	314.6	308.4	325.0	319.7	318.4	319.9	314.1	306.4
91	326.3	325.9	321.9	323.4	319.7	312.7	329.9	326.4	323.2	323.4	318.3	311.4
92	331.6	330.2	326.5	325.4	324.6	319.5	333.1	332.7	329.7	330.1	323.7	316.6
93	337.0	334.5	331.5	330.6	328.9	324.7	338.8	338.6	335.5	337.5	329.5	323.6
94	341.4	339.9	336.5	336.2	332.9	329.5	345.8	344.3	342.3	344.0	336.5	332.0
95	347.2	345.5	342.4	342.4	338.2	336.6	353.2	350.1	349.4	351.5	343.9	340.4
96	354.5	352.6	348.8	349.3	345.9	343.8	360.7	357.3	356.4	359.4	352.7	349.0
97	365.2	362.9	357.9	358.3	355.3	354.0	371.3	369.3	365.5	370.5	363.4	359.5
98	383.1	379.0	371.9	372.4	370.1	367.2	387.3		380.0	387.1	380.2	375.5
99					377.6							
FBP	398.2	392.0	388.6	386.2	382.6	379.1	401.0	397.6	392.9	394.8	395.5	384.3
Recovered (%)	97.0	97.7	98.0	98.1	97.7	97.6	98.3	98.1	97.4	97.7	97.7	97.7
Residue (%)	1.0	1.0	0.9	0.8	0.7	1.1	0.6	1.1	1.1	1.1	0.9	1.1
Loss (%)	2.0	1.3	1.1	1.1	1.6	1.3	1.1	0.8	1.5	1.2	1.4	1.2
$T_{V/L=20}$ (^{o}F)	128.4	118.5	118.5	119.4	120.3	123.2	123.3	114.6	115.3	115.6	116.4	119.0
RON												
MON												
(R+M)/2												

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856589	856590	856591	856592	856593	856594	856583	856584	856585	856586	856587	856588
Date	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09
Dry Vapor Pressure Equivalent (psi)	10.98	12.04	11.93	11.84	11.63	11.01	11.93	12.72	12.70	12.44	12.45	12.21
Specific Gravity	0.6899	0.7014	0.7039	0.7062	0.7112	0.7216	0.7274	0.7333	0.7349	0.7365	0.7396	0.7459
Ethanol (Vol%)	0.00	10.11	12.88	15.07	20.05	31.41	0.00	10.70	13.19	15.53	19.73	30.64
Ethanol (Wt%)	0.00	11.44	14.53	16.95	22.38	34.56	0.00	11.59	14.25	16.74	21.18	32.61
Distillation, D86 (^{o}F)												
IBP	85.7	85.8	86.0	87.6	89.3	90.0	81.8	80.6	84.5	83.3	87.6	89.3
1	89.8	90.3	91.0	92.2	93.3	95.7	84.3	84.9	88.0	87.0	91.3	94.1
2	93.9	94.8	95.9	96.7	97.3	101.5	86.8	89.2	91.4	90.7	95.1	98.9
3	98.1	99.4	100.8	101.3	101.3	107.3	89.3	93.6	94.8	96.0	99.0	103.1
4	102.2	103.9	105.5	105.8	105.4	112.3	92.0	98.3	97.8	99.6	102.2	106.0
5	106.6	107.7	109.6	109.8	110.0	115.8	95.1	100.6	100.6	102.4	104.8	108.5
6	111.2	110.9	113.0	113.2	113.5	119.5	97.8	102.8	103.0	104.6	107.1	110.9
7	114.9	113.7	116.0	116.2	116.8	122.6	100.4	104.8	105.1	106.9	109.0	113.0
8	118.4	116.1	118.3	118.5	119.5	125.0	102.9	106.6	106.9	108.6	110.8	115.0
9	121.6	118.7	120.4	120.7	121.8	128.5	105.0	108.5	108.8	110.3	112.6	117.0
10	124.6	121.2	122.8	123.1	124.4	131.1	107.1	109.9	110.5	112.0	114.3	118.8
11	128.1	123.3	125.2	125.4	127.1	133.2	109.3	111.4	112.1	113.5	115.9	120.5
12	131.4	125.5	127.2	127.9	129.5	135.5	111.3	112.9	113.6	115.3	117.5	122.1
13	134.6	127.7	129.3	130.2	131.5	137.8	113.3	114.2	115.3	116.6	119.0	123.8
14	138.0	129.8	131.4	132.4	133.8	140.1	115.1	115.8	116.9	118.2	120.5	125.5
15	141.5	131.9	133.4	134.5	136.1	142.3	117.0	117.5	118.3	119.6	122.1	127.1
16	145.0	134.0	135.4	136.5	137.9	143.9	119.1	118.9	119.7	121.0	123.5	128.6
17	148.7	136.1	137.2	138.4	139.8	145.6	121.1	120.4	121.0	122.4	124.9	130.0
18	152.4	138.3	139.0	140.3	141.7	147.0	123.1	121.6	122.4	123.7	126.3	131.6
19	156.8	140.2	140.8	142.2	143.5	148.6	125.1	123.0	123.8	125.1	127.8	133.2
20	161.1	141.9	142.5	143.9	145.0	149.7	127.2	124.4	125.1	126.9	129.5	135.0
21	164.7	143.5	143.9	145.4	146.6	151.1	129.2	125.8	126.2	128.2	130.9	136.5
22	168.1	145.0	145.4	146.9	148.0	152.1	131.3	127.1	127.6	129.7	132.4	138.0
23	172.2	146.5	146.9	148.3	149.1	152.8	133.6	128.5	129.3	131.3	133.7	139.5
24	175.9	147.9	148.2	149.5	150.3	153.7	135.7	129.8	130.8	132.9	134.8	140.9
25	179.1	149.2	149.3	150.7	151.4	154.2	137.9	131.3	132.1	134.1	136.1	142.2
26	182.7	150.2	150.4	151.7	152.2	155.0	140.1	132.5	133.2	135.4	137.4	143.4
27	186.0	151.2	151.3	152.8	153.0	155.9	142.5	133.9	134.6	136.4	138.7	144.5
28	189.0	152.1	152.4	153.6	154.0	156.4	145.0	134.8	135.9	137.6	139.9	145.7
29	191.7	153.1	153.2	154.5	154.8	157.1	147.3	136.0	137.2	138.6	141.2	146.9
30	194.1	154.2	153.9	155.3	155.2	157.5	149.4	137.2	138.3	139.7	142.3	147.9
31	196.4	155.0	154.6	155.8	155.8	157.8	151.6	138.4	139.6	141.0	143.2	149.0
32	198.5	155.5	155.4	156.5	156.5	158.3	153.9	139.6	140.7	142.0	144.3	150.2
33	200.1	156.0	156.0	157.2	156.9	158.8	156.1	140.8	141.8	143.0	145.4	151.2
34	201.4	156.5	156.5	157.7	157.6	159.2	158.5	141.9	142.9	143.9	146.3	152.2
35	202.8	157.1	157.1	158.1	157.9	159.3	160.9	143.1	143.9	145.1	147.3	153.0
36	204.0	157.8	157.6	158.5	158.3	159.5	163.3	143.9	145.1	146.0	148.3	153.7
37	204.9	158.7	158.0	158.9	158.8	159.7	165.6	144.5	146.1	146.9	149.3	154.6
38	206.0	159.9	158.4	159.3	159.1	159.9	167.8	145.7	146.8	147.9	150.1	155.4
39	206.9	160.9	158.8	159.6	159.4	160.2	169.8	146.5	147.7	148.9	150.9	156.3
40	207.7	162.5	159.2	159.9	159.7	160.3	172.0	147.6	148.8	149.5	151.8	157.0
41	208.6	163.6	159.6	160.2	160.0	160.4	174.2	148.6	149.6	150.5	152.6	157.7
42	209.1	164.9	160.2	160.4	160.2	160.6	176.5	149.3	150.5	151.2	153.2	158.3
43	209.9	169.0	160.6	160.7	160.4	160.7	178.8	150.2	151.4	152.0	154.0	159.0
44	210.6	177.9	160.9	161.0	160.6	160.8	181.2	151.4	152.2	152.7	154.9	159.6
45	211.5	189.7	161.5	161.4	160.8	161.1	183.4	151.6	152.9	153.4	155.6	160.2
46	212.1	198.8	162.7	161.6	161.0	161.2	185.6	152.6	153.6	154.2	156.3	160.7
47	212.6	203.9	163.9	161.9	161.1	161.4	187.7	153.4	154.3	154.9	157.0	160.9
48	213.1	206.9	165.5	162.3	161.3	161.5	190.1	154.2	155.0	155.4	157.6	161.3
49	213.8	208.7	169.1	162.3	161.5	161.6	192.6	154.8	155.7	156.1	158.2	162.0
50	214.6	210.1	177.7	162.4	161.7	161.7	194.8	155.8	156.3	156.9	158.7	162.7
51	214.7	211.5	190.1	163.7	161.8	161.8	197.0	157.9	157.0	157.7	159.2	163.2
52	215.0	212.5	199.9	165.4	162.0	162.0	199.4	160.2	157.8	158.1	159.8	163.6
53	215.4	212.9	205.7	167.0	162.2	162.0	201.8	162.6	158.7	158.9	160.3	164.1
54	215.9	213.6	209.1	170.8	162.3	162.2	204.1	165.2	159.5	159.4	160.8	164.5

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856589	856590	856591	856592	856593	856594	856583	856584	856585	856586	856587	856588
Date	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09
Distillation, D86 (^{o}F)												
55	216.8	213.8	211.1	181.3	162.4	162.4	206.5	169.9	160.2	159.8	161.3	164.9
56	217.7	214.3	212.4	196.8	162.6	162.4	208.8	178.9	160.9	160.2	161.9	165.3
57	218.0	215.9	213.4	207.1	162.7	162.6	211.0	187.2	162.4	161.1	162.4	165.7
58	218.5	216.0	214.3	211.2	163.0	162.7	213.4	194.2	165.3	161.4	162.7	166.1
59	219.3	216.6	215.3	213.4	163.4	162.8	215.7	200.7	169.6	161.9	163.1	166.5
60	219.8	217.7	216.2	214.7	163.6	162.8	218.1	206.3	176.4	163.3	163.5	166.9
61	220.5	217.5	217.1	215.8	164.0	162.8	220.7	210.6	186.6	162.5	163.9	167.2
62	221.1	217.2	218.0	216.9	164.5	163.2	223.1	214.0	197.0	165.3	164.2	167.5
63	221.6	218.4	218.7	217.9	165.5	163.4	225.5	217.3	205.8	169.7	164.7	167.8
64	222.1	217.7	219.3	218.5	166.9	163.6	227.4	220.5	212.3	177.3	165.5	168.0
65	222.8	217.9	218.8	219.2	171.9	163.7	229.6	223.4	216.8	194.0	166.0	168.4
66	223.5	220.4	218.5	219.9	195.6	163.9	232.0	226.2	220.6	207.2	166.4	168.8
67	224.1	222.7	219.7	220.6	212.1	164.1	234.2	228.5	224.4	215.2	166.8	169.1
68	224.9	224.1	219.0	221.2	216.3	164.1	236.6	231.0	227.8	220.1	167.5	169.3
69	225.4	223.8	219.3	221.5	218.3	164.3	238.8	233.3	230.7	224.4	168.2	169.7
70	225.9	223.9	222.4	222.3	219.4	164.4	241.1	235.7	233.1	229.2	170.5	170.0
71	226.9	224.0	223.7	223.4	220.3	164.5	243.7	238.1	235.3	233.3	188.0	170.3
72	228.2	222.8	224.1	223.8	221.4	164.7	246.3	240.9	238.4	237.1	212.9	170.6
73	230.0	221.3	224.2	224.6	222.7	164.8	248.8	237.8	241.7	240.3	226.4	171.1
74	231.7	222.8	224.5	226.0	223.6	165.0	251.2	240.7	243.9	243.1	232.3	171.4
75	232.6	226.0	226.1	227.6	225.0	165.1	253.8	247.0	244.7	245.3	236.4	171.9
76	233.7	229.0	226.5	228.8	226.6	165.4	256.6	251.8	246.1	247.7	240.4	172.4
77	234.6	231.1	227.7	229.5	227.9	165.6	259.2	256.2	248.8	249.2	244.8	173.1
78	235.9	232.8	230.5	230.2	229.2	165.8	262.3	258.9	252.7	252.3	249.2	174.5
79	237.6	234.5	232.6	231.5	230.3	166.2	265.5	261.5	257.7	256.6	252.7	176.1
80	239.8	235.6	233.9	233.7	231.1	166.6	268.0	264.6	262.2	260.9	255.6	180.2
81	241.7	235.9	233.9	236.8	232.2	167.3	271.1	266.8	266.0	264.2	258.8	210.2
82	243.6	237.5	234.7	239.4	233.4	170.1	274.8	269.8	269.2	267.5	262.3	250.5
83	245.8	240.7	238.4	241.7	234.8	220.9	278.1	272.4	271.9	270.2	265.1	256.4
84	248.9	244.0	240.8	242.7	237.3	227.9	281.3	276.0	274.8	273.8	267.8	260.8
85	252.6	247.2	242.0	242.8	240.4	230.8	284.9	279.7	278.5	275.7	271.4	265.3
86	255.8	251.0	245.1	245.1	243.4	233.9	288.2	283.6	281.8	280.3	275.2	270.1
87	260.2	255.2	249.5	250.0	246.0	237.1	291.7	288.1	285.5	285.6	279.7	274.9
88	265.3	257.7	254.5	254.9	249.1	241.3	296.1	292.0	290.4	289.0	284.7	279.9
89	271.4	261.5	259.8	260.2	253.1	245.3	300.1	296.4	295.5	293.7	287.7	285.4
90	279.3	269.0	265.5	267.1	258.2	251.1	303.6	301.3	300.1	299.3	292.4	289.9
91	291.0	278.9	273.6	275.4	265.2	258.5	307.4	305.0	305.4	304.6	299.9	294.0
92	304.4	291.1	285.7	285.1	275.3	266.3	312.5	309.3	310.4	310.5	304.8	299.4
93	318.9	306.1	301.4	299.4	289.2	277.8	318.4	317.6	316.6	316.1	309.7	306.6
94	333.9	322.6	319.3	317.6	305.4	293.2	326.2	325.0	323.6	322.3	317.8	314.6
95	348.7	337.6	336.0	333.8	324.4	312.8	335.6	333.5	331.1	327.6	327.0	323.0
96	364.1	354.6	351.4	350.5	340.2	331.2	346.3	343.2	338.6	339.2	335.2	334.3
97	384.9	373.5	371.3	369.3	360.1	358.3	360.9	356.0	355.0	354.3	346.5	349.9
98	407.6	391.7			383.7	382.3	381.4	373.9	377.0	375.2	365.0	367.2
99												
FBP	413.1	399.1	398.7	396.3	392.5	383.0	397.9	384.5	384.5	381.7	376.8	378.1
Recovered (%)	96.5	96.8	96.6	96.7	96.5	97.0	97.2	97.4	97.3	98.1	97.8	97.5
Residue (%)	1.0	1.3	1.3	1.2	1.1	1.3	0.8	1.0	1.0	1.0	1.0	1.2
Loss (%)	2.5	1.9	2.1	2.1	2.4	1.7	2.0	1.6	1.7	0.9	1.2	1.3
$T_{V/L=20}$ (^{o}F)	134.3	121.4	121.6	122.1	122.9	129.5	122.6	113.8	115.0	114.4	116.4	119.2
RON												
MON												
(R+M)/2												

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856601	856602	856603	856604	856605	856606	856595	856596	856597	856598	856599	856600
Date	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09
Dry Vapor Pressure Equivalent (psi)	13.67	14.47	14.42	14.36	14.17	13.67	13.75	14.67	14.64	14.59	14.38	14.25
Specific Gravity	0.7432	0.7483	0.7495	0.7507	0.7532	0.7582	0.7228	0.7295	0.7310	0.7328	0.7363	0.7421
Ethanol (Vol%)	0.00	10.34	13.81	15.58	20.26	31.01	0.00	10.47	12.61	15.04	20.01	29.61
Ethanol (Wt%)	0.00	10.97	14.62	16.48	21.35	32.47	0.00	11.39	13.69	16.30	21.57	31.67
Distillation, D86 (^{o}F)												
IBP	79.2	81.0	80.7	82.3	82.7	83.8	75.4	78.0	78.4	79.2	78.6	81.8
1	81.6	83.2	83.1	82.7	85.3	86.9	79.2	80.7	81.7	82.0	81.8	85.7
2	84.0	85.3	85.5	83.0	87.8	90.0	83.1	83.4	84.9	84.8	84.9	89.6
3	86.4	87.5	87.8	83.3	90.3	93.1	86.7	86.0	88.1	87.5	88.1	93.4
4	89.2	89.6	90.2	89.8	92.9	97.0	89.5	88.7	91.2	90.4	91.2	96.7
5	92.3	92.0	92.7	94.4	96.2	99.9	92.3	91.4	93.8	93.1	93.9	99.1
6	95.3	95.0	95.5	96.9	98.9	102.5	94.6	93.4	95.6	95.3	96.2	101.1
7	98.0	97.4	98.1	99.2	101.4	105.0	96.7	95.7	97.5	97.2	98.2	103.0
8	100.3	99.8	100.6	101.4	104.0	107.5	98.5	97.6	99.1	98.8	100.1	105.0
9	102.5	101.8	102.7	103.3	105.8	109.6	100.2	99.0	100.7	100.5	101.9	106.9
10	104.3	103.7	104.5	105.2	107.6	111.7	102.0	100.6	102.1	102.1	103.5	108.5
11	106.2	105.4	106.3	106.9	109.5	113.8	103.6	102.0	103.6	103.6	105.0	110.1
12	108.2	106.9	108.3	108.6	111.3	116.0	105.1	103.5	104.9	105.1	106.6	112.0
13	110.1	108.8	110.2	110.2	112.9	118.1	106.7	104.8	106.2	106.6	108.3	113.4
14	112.2	110.7	111.8	111.9	114.6	119.9	108.4	106.2	107.7	108.0	109.9	115.0
15	114.1	112.1	113.4	113.8	116.8	121.8	110.2	107.5	109.1	109.5	111.3	116.5
16	116.0	113.8	115.1	115.5	118.7	123.8	111.6	108.9	110.3	111.0	112.7	118.1
17	118.0	115.5	116.8	117.2	120.1	125.8	113.4	110.1	111.7	112.4	114.3	119.9
18	120.0	117.3	118.5	118.9	121.8	127.9	114.8	111.7	113.1	113.8	115.7	121.5
19	122.1	118.8	120.2	120.4	123.5	129.7	116.3	112.8	114.4	115.0	117.2	122.9
20	124.2	120.4	121.8	122.2	125.1	131.6	118.1	114.0	115.7	116.4	118.7	124.6
21	126.3	122.0	123.4	123.9	127.1	133.4	120.2	115.6	117.0	117.7	120.0	126.2
22	128.6	123.6	125.0	125.4	129.2	135.1	121.9	116.7	118.4	119.0	121.3	127.9
23	131.2	125.1	126.5	127.0	130.5	136.6	123.5	118.0	119.8	120.7	123.1	129.2
24	133.7	126.7	128.2	128.8	132.4	138.5	125.2	119.2	121.3	122.0	124.5	130.6
25	136.0	128.4	129.9	130.4	134.0	140.3	127.0	120.6	122.6	123.2	125.9	132.4
26	138.3	129.7	131.4	132.0	135.4	142.0	129.1	122.1	123.8	124.5	127.4	134.0
27	140.9	131.4	132.8	133.7	137.3	143.4	130.9	123.5	125.1	126.0	128.6	135.4
28	143.3	133.1	134.2	135.4	138.8	144.7	132.7	124.6	126.6	127.4	130.1	136.7
29	145.7	134.6	135.7	136.9	140.3	146.1	134.4	126.0	128.0	128.8	131.6	138.2
30	147.9	136.0	137.3	138.3	141.8	147.5	136.5	127.2	129.4	130.1	132.9	139.4
31	150.2	137.4	138.8	139.7	143.2	148.8	138.5	128.5	130.5	131.4	134.3	140.7
32	152.6	139.0	140.4	140.9	144.5	149.9	140.3	129.3	131.6	132.6	135.8	142.0
33	155.2	140.4	141.8	142.4	145.8	151.1	142.2	130.9	132.8	133.6	137.1	143.2
34	157.9	141.7	142.9	143.7	146.7	152.1	144.1	132.1	133.9	134.8	138.2	144.4
35	160.4	143.1	144.1	144.9	147.9	153.1	146.2	133.3	135.3	136.0	139.3	145.4
36	162.6	144.0	145.3	146.2	148.9	154.1	148.2	134.5	136.5	137.1	140.5	146.4
37	165.0	145.2	146.5	147.3	150.0	155.1	150.2	135.9	137.4	138.2	141.6	147.4
38	167.4	146.4	147.6	148.4	150.8	156.0	152.1	136.8	138.7	139.2	142.7	148.4
39	169.9	147.6	148.7	149.4	151.7	156.9	154.0	137.9	139.8	140.4	144.0	149.5
40	172.3	148.6	149.7	150.4	152.7	157.5	156.0	138.8	140.7	141.5	145.1	150.6
41	174.9	149.5	150.5	151.4	153.4	158.2	157.9	139.9	141.9	142.5	146.1	151.5
42	177.2	150.5	151.5	152.1	154.3	159.0	159.8	141.3	142.8	143.6	147.0	152.4
43	179.5	151.6	152.4	152.9	155.3	159.6	161.7	142.0	143.4	144.3	147.8	153.2
44	182.1	152.6	153.3	153.6	156.2	160.2	163.4	142.9	144.5	145.4	148.8	154.1
45	184.4	153.3	154.0	154.4	156.8	160.9	165.7	143.8	145.3	146.4	149.8	154.9
46	186.8	153.3	154.8	155.4	157.6	161.5	167.9	144.8	146.4	147.2	150.5	155.7
47	189.3	154.3	155.7	156.0	158.3	162.1	170.0	145.5	147.3	148.1	151.2	156.4
48	191.6	155.5	156.7	156.8	158.9	162.6	172.1	146.6	148.1	148.9	152.0	157.2
49	194.1	156.9	157.5	157.8	159.5	163.1	174.0	147.5	148.9	150.0	152.8	157.8
50	196.5	158.3	158.2	158.3	160.2	163.5	175.9	148.2	149.8	150.7	153.4	158.4
51	198.7	159.7	159.0	158.8	160.9	164.0	177.9	149.0	150.7	151.4	154.0	159.0
52	201.0	160.8	159.8	159.3	161.5	164.5	179.9	149.3	151.5	152.3	154.8	159.6
53	203.1	162.8	160.5	160.1	162.0	165.1	182.0	150.4	152.1	152.9	155.7	160.2
54	205.2	165.2	161.6	161.0	162.6	165.4	184.0	151.1	152.8	153.5	156.4	160.7

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856601	856602	856603	856604	856605	856606	856595	856596	856597	856598	856599	856600
Date	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09
Distillation, D86 (^{o}F)												
55	207.4	168.4	162.7	160.9	163.0	165.9	186.0	152.2	153.6	154.2	156.9	161.4
56	209.7	172.9	163.6	161.4	163.5	166.2	188.0	153.0	154.1	154.9	157.6	161.8
57	211.9	178.5	164.8	162.4	163.8	166.5	190.0	154.0	154.9	155.7	158.2	162.4
58	214.0	185.2	165.9	163.1	164.5	167.0	192.1	154.4	155.8	156.2	158.8	162.8
59	216.1	191.7	168.0	163.8	164.9	167.5	194.0	154.7	156.4	156.9	159.3	163.2
60	218.4	198.0	172.5	164.4	165.3	167.7	196.1	155.0	156.8	157.6	160.0	163.7
61	220.6	204.1	177.6	165.4	166.2	167.9	197.9	157.7	157.3	158.0	160.5	164.2
62	222.7	208.6	184.6	166.3	166.2	168.3	199.7	159.1	158.2	158.5	160.9	164.6
63	224.8	211.7	193.2	168.0	166.8	168.6	201.7	165.0	158.8	159.1	161.4	165.0
64	227.0	214.9	202.4	170.3	167.2	168.9	203.9	172.2	159.6	159.7	162.0	165.4
65	229.3	219.9	210.1	175.0	167.8	169.2	205.8	180.0	161.2	160.3	162.4	165.8
66	231.3	222.9	216.6	182.1	168.1	169.5	207.9	187.5	164.3	160.9	162.6	166.2
67	233.3	225.5	221.1	193.1	168.7	169.8	210.0	193.3	168.0	161.6	163.1	166.6
68	235.5	228.4	224.8	205.3	169.7	169.9	212.0	197.9	173.1	162.3	163.9	167.0
69	237.7	231.0	228.1	215.0	170.7	170.2	214.1	202.0	180.7	163.1	164.4	167.3
70	239.8	233.6	230.8	223.2	172.1	170.7	216.5	206.5	190.7	164.1	164.8	167.6
71	241.8	236.0	233.2	229.0	175.8	171.0	218.5	209.6	200.2	166.3	165.2	168.1
72	243.8	237.7	235.6	232.6	183.1	171.2	220.5	212.7	206.6	170.4	165.5	168.5
73	245.7	239.5	237.7	235.2	202.4	171.5	222.6	215.5	211.5	179.8	166.0	169.0
74	247.7	242.0	240.1	237.1	222.5	171.9	224.7	218.0	215.5	194.5	166.5	169.4
75	249.7	244.4	242.1	238.9	231.5	172.3	226.8	220.6	218.5	206.2	166.9	169.8
76	251.8	246.8	244.5	241.6	236.2	172.6	228.8	223.0	221.4	213.4	168.4	170.2
77	253.9	249.0	246.6	244.8	239.8	173.2	231.4	225.5	224.2	218.1	171.1	170.5
78	256.0	251.5	247.5	247.7	243.3	173.7	233.5	227.6	227.3	223.2	174.5	170.9
79	257.9	253.8	248.8	250.2	246.7	174.6	235.7	229.7	229.5	226.8	183.5	171.3
80	260.0	255.8	252.4	252.6	249.7	176.6	237.6	232.1	231.7	229.6	204.7	171.7
81	262.2	257.6	255.7	254.8	251.9	178.5	239.7	234.9	234.4	232.0	222.5	172.2
82	264.2	258.9	258.6	256.9	254.6	224.2	242.0	236.9	237.0	234.7	228.8	172.6
83	266.3	260.5	261.0	259.0	256.8	245.8	244.3	239.7	239.6	237.1	233.3	172.9
84	268.6	264.0	263.2	261.0	258.8	251.7	246.7	242.4	241.5	239.8	237.1	173.5
85	271.0	267.2	265.4	263.2	261.1	255.3	249.0	245.3	243.8	242.8	240.4	174.3
86	273.5	269.6	268.0	265.5	264.1	258.8	251.6	247.7	246.8	245.5	243.5	175.8
87	276.2	271.9	270.4	268.1	266.9	261.8	253.9	249.7	249.6	247.9	246.4	184.0
88	278.9	274.2	273.2	271.3	270.4	264.7	256.5	252.5	252.1	250.6	249.3	217.9
89	281.8	276.9	276.4	272.8	273.4	267.8	259.1	255.3	254.8	253.6	252.0	245.7
90	284.8	280.2	279.3	276.9	276.2	271.1	261.6	258.2	257.8	256.5	254.4	250.5
91	288.0	283.5	282.7	281.1	279.4	275.0	264.6	261.7	260.9	259.5	257.6	254.5
92	291.1	287.3	285.9	283.7	282.2	278.1	268.0	265.2	264.2	262.5	261.5	258.9
93	294.1	290.9	289.5	286.9	287.4	282.6	271.8	268.9	268.2	266.7	265.4	262.7
94	298.3	294.3	293.0	291.6	292.4	287.4	276.2	272.8	272.3	271.4	269.8	266.8
95	303.5	298.4	297.3	297.2	296.8	292.9	280.5	277.8	276.9	275.2	274.3	271.8
96	309.3	305.5	304.0	302.7	301.5	298.5	285.9	282.9	282.9	279.9	279.5	277.1
97	317.6	313.1	310.4	307.3	309.4	305.0	291.3	288.5	288.7	288.3	286.2	283.1
98	331.9	323.5	321.1	318.4	320.0	315.3	299.6	296.7	295.0	296.4	295.1	291.2
99								304.9				
FBP	341.4	335.0	333.3	331.7	331.3	325.9	312.5	305.7	305.8	307.0	303.5	308.0
Recovered (%)	97.1	96.5	96.5	97.6	97.0	97.7	97.8	96.3	97.6	97.2	97.4	98.0
Residue (%)	1.0	0.7	0.7	0.6	0.8	0.6	0.8	0.6	0.7	0.7	0.6	0.5
Loss (%)	1.9	2.8	2.8	1.8	2.2	1.7	1.4	3.1	1.7	2.1	2.0	1.5
$T_{V/L=20}$ (^{o}F)	112.9	107.6	108.0	107.8	109.3	112.2	109.7	104.4	104.7	104.9	106.8	107.5
RON							89.3	95.3	96.4	97.4	99.1	101.6
MON							83.3	87.2	87.5	88.1	88.5	89.5
(R+M)/2							86.3	91.3	92.0	92.8	93.8	95.6

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856613	856614	856615	856616	856617	856618	856607	856608	856609	856610	856611	856612
Date	2/13/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09
Dry Vapor Pressure Equivalent (psi)	12.48	13.28	13.35	13.20	12.98	12.38	12.24	13.13	13.06	12.86	12.63	12.37
Specific Gravity	0.6903	0.7151	0.7155	0.7174	0.7217	0.7309	0.7260	0.7373	0.7388	0.7409	0.7434	0.7496
Ethanol (Vol%)	0.00	12.50	13.26	15.46	20.22	30.66	0.00	9.51	12.36	15.60	20.23	31.18
Ethanol (Wt%)	0.00	13.88	14.72	17.11	22.24	33.30	0.00	10.24	13.28	16.72	21.60	33.02
Distillation, D86 (^{o}F)												
IBP	88.4	83.7	82.9	84.9	84.5	86.3	79.3	81.1	83.7	83.1	84.1	86.4
1	88.5	87.2	85.9	85.1	88.5	86.7	83.0	84.5	86.8	86.4	85.8	90.4
2	88.6	90.7	88.8	85.3	92.4	87.1	86.7	87.8	90.0	89.6	87.4	94.5
3	88.7	94.1	91.7	85.6	96.3	87.5	90.6	91.2	93.2	92.9	92.2	98.5
4	89.9	97.6	94.6	85.8	100.2	101.6	95.1	95.9	96.5	97.7	99.2	103.2
5	100.8	101.1	99.2	86.1	104.7	109.2	98.4	99.1	100.0	101.6	102.5	106.9
6	107.6	106.0	105.0	99.9	109.7	113.4	101.5	102.2	103.2	104.8	105.5	109.6
7	111.1	109.8	108.8	106.1	113.8	117.4	104.4	105.1	105.6	106.4	107.9	112.1
8	112.9	113.3	112.8	110.2	117.7	120.9	106.6	106.9	107.7	108.7	110.1	114.3
9	115.7	116.4	116.1	113.7	121.1	123.8	109.1	109.0	109.8	110.9	112.0	116.7
10	117.5	119.1	118.8	116.8	123.7	126.2	111.4	110.8	111.8	112.8	113.9	118.6
11	119.3	121.8	121.5	119.5	125.9	128.9	113.6	112.6	113.5	114.8	115.9	120.7
12	121.6	123.8	123.7	122.1	128.5	131.5	115.9	114.2	115.2	116.3	117.6	122.5
13	124.2	126.2	125.9	124.3	130.9	133.9	118.1	115.9	116.7	118.2	119.4	124.5
14	127.7	128.3	128.2	126.6	133.3	136.2	120.3	117.3	118.3	119.6	121.0	126.3
15	130.5	130.4	130.4	129.2	135.2	138.3	122.3	119.0	119.9	121.2	122.6	128.2
16	134.1	132.4	132.3	131.2	137.2	140.2	124.3	120.7	121.4	122.5	124.1	129.7
17	137.3	134.5	134.1	133.2	139.0	142.3	126.5	122.2	122.9	124.3	125.7	131.3
18	140.3	136.0	136.0	135.5	140.9	144.1	128.7	123.4	124.4	125.9	127.4	133.2
19	143.5	137.9	137.9	137.5	142.4	145.6	130.9	124.5	125.6	127.2	129.1	134.8
20	146.8	139.5	139.5	139.3	143.9	147.2	133.0	125.9	127.1	128.9	130.6	136.4
21	150.1	141.0	140.9	141.1	145.3	148.7	135.2	127.3	128.6	130.2	132.2	138.2
22	153.5	142.4	142.3	142.6	146.6	149.8	137.3	129.1	130.0	132.0	133.6	139.4
23	157.2	143.6	143.9	143.9	147.9	151.3	139.2	130.7	131.3	133.2	135.2	140.7
24	160.5	145.1	145.3	145.4	149.0	152.3	141.3	132.0	132.7	134.5	136.7	142.1
25	164.3	146.2	146.6	146.8	150.2	153.2	143.8	133.2	134.0	135.9	138.0	143.3
26	167.7	147.4	147.8	148.2	151.3	154.0	145.9	134.3	135.3	136.8	139.4	144.5
27	170.8	148.6	148.9	149.4	152.1	154.8	148.0	135.6	136.7	138.3	140.6	145.9
28	174.2	149.8	149.9	150.4	152.9	155.5	150.3	137.0	137.7	139.6	141.9	147.2
29	177.6	150.7	150.8	151.5	153.7	156.2	152.9	138.3	138.9	140.7	143.1	148.4
30	180.7	151.6	151.7	152.3	154.4	156.7	155.1	139.3	140.0	141.7	144.3	149.2
31	183.9	152.4	152.6	153.1	155.1	157.3	157.6	140.8	141.3	142.9	145.2	150.1
32	186.6	153.1	153.4	153.9	155.7	157.8	159.9	141.5	142.5	143.8	146.1	151.2
33	189.2	154.0	154.1	154.7	156.4	158.1	162.2	142.6	143.4	145.0	147.1	152.2
34	191.6	154.4	154.9	155.4	157.0	158.6	164.5	143.6	144.3	146.0	148.0	153.0
35	193.7	154.9	155.7	156.0	157.4	159.2	166.7	144.7	145.3	147.0	149.1	153.8
36	195.7	155.9	156.3	156.6	157.8	159.5	169.0	145.5	146.3	148.0	150.1	154.6
37	197.6	156.5	156.9	157.2	158.3	159.9	171.4	146.3	147.4	148.9	150.9	155.4
38	199.2	157.0	157.5	157.4	158.7	160.2	173.5	147.1	148.2	149.6	151.6	156.2
39	200.6	157.5	158.0	157.7	158.9	160.5	175.6	148.1	148.9	150.5	152.3	157.0
40	202.0	157.9	158.5	158.5	159.3	160.7	178.0	149.1	149.7	151.4	153.0	157.8
41	203.3	158.2	159.0	158.9	159.4	161.0	180.2	149.5	150.6	152.2	153.7	158.1
42	204.6	159.0	159.5	159.3	159.5	161.2	182.6	150.5	151.4	153.0	154.6	158.3
43	205.4	159.7	160.0	159.5	160.1	161.4	184.8	151.2	152.2	153.9	155.6	159.3
44	206.6	160.3	160.5	159.3	160.7	161.5	187.2	151.9	152.8	154.5	156.5	160.1
45	207.9	161.0	161.0	160.3	160.9	161.7	189.4	152.8	153.4	155.1	157.1	160.6
46	208.9	162.0	161.5	160.9	161.3	162.0	191.9	153.4	154.1	156.0	157.8	161.4
47	209.8	162.9	162.0	160.8	161.4	162.2	193.9	154.1	154.9	156.5	158.3	161.9
48	210.9	164.3	162.7	160.7	161.6	162.5	196.1	155.0	155.5	157.1	158.9	162.4
49	211.8	166.2	163.7	161.5	162.0	162.7	198.3	155.8	156.1	157.7	159.5	162.9
50	212.7	169.1	164.9	161.3	162.3	162.8	200.6	156.7	156.9	158.4	160.0	163.3
51	213.2	175.0	167.3	162.4	162.0	163.0	202.9	159.0	157.4	158.6	160.6	163.7
52	215.2	184.3	172.4	163.1	161.8	163.2	205.2	163.0	157.8	159.6	161.2	164.2
53	215.3	195.7	181.4	162.9	162.7	163.4	207.6	167.0	158.4	160.0	161.6	164.6
54	215.4	203.0	192.9	164.7	162.9	163.7	209.9	172.5	159.0	160.6	162.0	165.0

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856613	856614	856615	856616	856617	856618	856607	856608	856609	856610	856611	856612
Date	2/13/09	3/4/09	3/4/09	3/4/09	3/4/09	3/4/09	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09
Distillation, D86 (^{o}F)												
55	216.4	208.0	201.9	166.0	163.0	163.8	212.1	179.7	159.9	161.2	162.5	165.4
56	217.4	210.9	207.5	166.5	163.5	164.0	214.4	187.2	160.6	161.6	163.1	165.9
57	218.3	212.7	210.6	170.9	163.8	163.3	216.9	194.7	163.1	162.0	163.6	166.3
58	220.2	213.9	213.2	180.4	164.2	163.9	219.2	200.6	169.0	162.9	164.1	166.7
59	221.5	215.1	215.1	198.3	164.6	164.4	221.1	205.5	177.0	163.5	164.5	167.0
60	222.4	216.8	216.3	208.2	165.0	164.6	223.5	209.7	187.9	163.6	165.0	167.3
61	222.8	218.5	217.4	212.5	165.6	164.9	225.7	213.9	197.9	163.5	165.4	167.7
62	224.1	220.1	219.1	215.2	166.3	165.3	228.1	217.7	206.4	165.3	165.8	167.8
63	225.6	221.8	220.8	217.6	167.2	165.4	230.5	221.0	211.8	170.8	166.2	168.2
64	226.4	223.0	222.5	219.5	168.7	165.5	233.0	224.4	217.0	179.9	166.9	168.4
65	226.9	224.4	224.0	221.0	171.4	165.7	235.3	226.8	220.8	196.4	167.3	168.8
66	227.4	225.4	224.1	222.7	180.1	165.9	237.2	229.0	224.9	210.3	167.9	169.1
67	228.5	222.9	223.3	223.3	198.8	166.2	239.3	232.3	229.0	218.6	168.4	169.4
68	230.6	222.6	224.6	225.3	214.6	166.3	241.6	234.5	232.4	223.4	169.0	169.6
69	231.9	226.3	227.1	226.8	219.3	166.4	244.0	236.7	235.4	228.5	170.8	170.0
70	232.7	229.2	228.6	226.2	222.2	166.7	246.1	239.1	238.2	232.2	177.4	170.4
71	234.0	230.6	229.1	227.0	224.0	166.9	248.3	241.0	240.7	235.5	198.7	170.4
72	235.7	227.8	229.0	229.1	225.8	167.2	250.7	244.3	242.8	238.5	223.5	171.0
73	237.5	230.4	229.3	229.8	227.7	167.3	253.0	247.3	243.9	242.8	232.4	171.0
74	239.2	233.7	232.2	232.0	229.8	167.3	255.4	249.3	246.6	246.0	237.4	171.5
75	241.3	236.8	235.8	231.9	232.1	167.6	257.6	251.7	250.5	248.6	241.9	172.1
76	243.3	239.3	238.6	234.5	234.2	168.0	260.3	254.7	252.7	251.2	246.1	172.5
77	244.7	238.2	241.0	237.3	235.9	168.3	263.6	257.6	255.1	253.7	250.2	172.9
78	246.8	236.5	241.9	238.6	237.6	169.0	266.4	260.6	258.3	253.6	254.2	173.8
79	249.1	241.4	242.1	242.3	239.9	169.9	268.9	263.2	261.4	256.5	257.6	174.0
80	251.7	245.6	244.3	236.8	242.8	169.9	271.2	265.5	264.5	261.1	260.7	180.6
81	253.9	249.4	247.8	242.1	245.4	174.9	273.5	268.6	267.1	265.0	263.3	235.3
82	257.0	252.9	251.1	247.6	246.5	222.8	276.0	271.3	270.4	269.3	265.5	251.7
83	260.0	254.8	254.3	252.3	247.8	234.8	279.4	273.1	273.6	272.8	267.9	257.7
84	263.4	256.0	258.1	256.5	252.2	237.2	282.7	275.0	277.0	275.6	270.2	262.9
85	267.2	260.1	261.7	260.3	256.5	244.0	286.1	280.3	279.7	278.7	273.1	266.5
86	271.3	265.6	264.6	264.6	260.2	249.9	289.2	285.2	281.7	281.9	277.2	270.1
87	275.7	270.6	268.1	269.1	264.5	256.0	292.4	289.3	285.8	285.3	281.0	274.6
88	280.5	275.6	273.3	273.0	269.2	261.4	294.6	292.5	288.6	289.3	285.1	278.1
89	286.2	281.4	279.6	278.7	274.8	266.5	299.1	295.9	291.2	293.2	290.7	282.6
90	292.8	288.2	286.4	285.1	281.8	272.8	304.0	300.0	297.8	297.1	295.0	286.7
91	299.6	295.4	293.8	292.1	288.9	279.9	308.5	304.3	302.4	299.1	298.4	291.7
92	306.4	302.7	301.7	300.0	296.8	288.2	312.4	308.3	307.3	304.1	302.6	297.4
93	312.4	310.5	309.6	308.7	305.1	297.0	316.7	312.8	312.0	310.3	307.7	302.6
94	320.0	317.2	317.3	316.8	314.0	306.5	320.8	319.6	316.0	316.4	313.1	308.5
95	329.1	327.5	324.7	326.2	323.5	316.9	325.5	324.7	319.5	321.9	318.8	314.6
96	339.6	338.3	335.3	336.3	334.6	328.8	330.7	331.1	326.9	328.7	325.2	321.8
97	355.3	352.3	350.8	350.0	349.2	342.8	338.0	339.2	335.4	336.6	334.0	330.3
98		372.5		369.0	362.6	359.9	348.8		347.7	348.4	347.2	342.2
99												
FBP	385.3	380.3	369.7	373.7	371.3	368.8	370.9	359.3	359.6	359.4	358.4	354.7
Recovered (%)	96.8	95.7	95.9	95.8	96.0	96.9	98.0	97.6	97.1	97.6	97.9	97.7
Residue (%)	1.0	1.0	1.1	1.0	1.0	1.3	0.6	0.9	0.7	0.8	0.8	0.8
Loss (%)	2.2	3.3	3.0	3.2	3.0	1.8	1.4	1.5	2.2	1.6	1.3	1.5
$T_{V/L=20}$ (^{o}F)	126.1	117.3	118.0	118.2	119.8	123.8	120.9	115.0	114.2	115.4	116.7	118.2
RON	92.9	99.5	99.6	100.5	101.7	101.8						
MON	88.9	90.9	91.1	91.1	91.2	91.2						
(R+M)/2	90.9	95.2	95.4	95.8	96.5	96.5						

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856625	856626	856627	856628	856629	856630	856619	856620	856621	856622	856623	856624
Date	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09
Dry Vapor Pressure Equivalent (psi)	13.04	13.96	14.05	13.74	13.64	12.97	12.09	13.01	12.89	12.83	12.62	12.23
Specific Gravity	0.7235	0.7298	0.7317	0.7336	0.7367	0.7437	0.7281	0.7339	0.7357	0.7370	0.7404	0.7469
Ethanol (Vol%)	0.00	10.30	13.09	15.72	20.29	30.94	0.00	9.99	12.95	15.24	20.20	31.26
Ethanol (Wt%)	0.00	11.20	14.21	17.01	21.86	33.03	0.00	10.81	13.97	16.42	21.66	33.23
Distillation, D86 (^{o}F)												
IBP	79.8	84.5	82.9	82.1	84.8	86.2	79.9	80.4	82.1	82.9	82.8	84.6
1	81.8	86.6	85.3	84.4	87.6	89.1	83.0	83.9	85.5	86.7	83.5	89.0
2	83.9	88.6	87.7	86.8	90.4	92.0	86.2	87.3	88.9	90.6	84.1	93.3
3	86.0	90.7	90.0	89.1	93.3	94.8	89.3	91.4	92.3	94.4	94.6	97.6
4	88.0	92.7	92.4	91.4	96.1	97.7	92.2	95.3	95.5	97.4	98.0	101.2
5	90.5	94.8	94.7	93.7	98.9	100.6	94.6	98.2	98.4	100.0	100.5	103.9
6	96.1	96.8	97.9	96.0	102.3	105.3	96.9	100.4	100.9	102.5	102.9	106.3
7	100.8	99.3	102.9	100.4	107.8	109.8	99.0	102.2	102.9	104.5	104.8	108.8
8	105.0	103.6	106.9	105.4	112.2	113.9	100.9	104.0	104.9	106.3	106.8	111.0
9	108.7	107.2	110.1	109.1	115.5	117.5	102.8	105.7	106.6	108.0	108.9	112.9
10	111.2	110.4	113.4	112.5	118.9	120.9	104.6	107.3	108.3	109.8	110.7	114.8
11	115.0	113.6	116.3	115.9	121.5	124.6	106.4	108.8	110.0	111.2	112.0	116.6
12	118.7	116.7	119.0	118.8	124.2	127.9	108.2	110.2	111.5	112.6	113.5	118.4
13	122.3	119.4	121.8	121.7	126.9	130.6	109.9	111.7	113.0	113.9	115.3	120.4
14	126.0	121.9	124.4	124.1	129.5	133.8	111.7	113.2	114.5	115.5	116.8	122.2
15	129.8	124.2	127.0	126.8	132.3	136.8	113.7	114.5	115.9	117.4	118.5	123.7
16	133.7	126.4	129.4	129.8	134.8	139.5	116.0	116.0	117.3	118.8	119.5	125.4
17	137.6	129.1	131.9	132.3	137.6	142.1	118.1	117.3	118.7	120.2	121.3	127.3
18	141.7	131.5	134.4	134.8	140.0	144.6	120.2	118.6	120.1	121.8	123.0	129.1
19	146.2	133.9	136.8	137.6	142.5	147.0	122.5	120.1	121.4	123.1	124.4	130.5
20	150.6	136.5	139.3	140.2	144.6	149.1	124.8	121.5	122.7	124.4	126.3	132.2
21	154.9	138.7	141.8	142.5	146.9	150.9	126.7	122.9	124.1	125.8	127.8	134.3
22	160.0	140.9	143.9	144.8	148.9	152.4	128.8	124.3	125.7	127.4	129.5	135.9
23	165.6	143.1	146.1	146.9	150.6	153.8	131.0	125.8	127.4	128.8	131.2	137.4
24	170.9	145.3	148.1	148.6	152.0	154.9	133.3	127.3	129.0	130.4	132.8	139.2
25	176.0	147.2	149.7	150.2	153.5	156.1	135.6	128.8	130.6	131.8	134.4	140.7
26	181.4	148.9	151.3	151.7	154.9	157.2	137.7	130.1	132.0	133.0	135.5	142.2
27	186.4	150.5	152.7	153.1	156.1	158.1	139.9	131.4	133.4	134.3	137.0	143.7
28	191.4	152.1	153.9	154.3	157.2	158.8	142.2	132.8	134.7	135.9	138.8	145.0
29	195.8	153.4	154.7	155.4	158.1	159.6	144.6	134.2	136.0	137.2	140.3	146.5
30	199.3	154.8	155.7	156.6	158.8	160.2	147.0	135.5	137.3	138.7	141.4	147.5
31	202.6	155.9	156.7	157.5	159.6	160.7	149.6	136.8	138.8	140.2	142.7	148.5
32	205.5	156.9	157.5	158.1	160.4	161.3	151.8	138.2	139.9	141.4	143.7	149.7
33	208.1	158.0	158.2	158.6	160.9	161.6	154.1	139.2	141.3	142.5	144.9	151.2
34	209.8	158.9	159.2	159.2	161.4	162.1	156.5	140.2	142.5	143.7	146.2	152.5
35	211.8	159.5	159.8	159.9	161.9	162.6	159.0	141.3	143.9	145.0	147.1	153.3
36	213.9	160.1	160.4	160.4	162.5	162.9	161.5	142.6	144.9	146.2	148.5	154.2
37	215.0	160.7	160.9	160.8	162.5	163.0	164.1	143.8	146.0	147.1	149.5	155.2
38	216.0	161.8	161.4	161.3	162.4	163.4	167.2	144.8	146.9	148.5	150.3	156.1
39	217.7	162.9	161.7	161.8	162.8	163.7	170.0	145.9	148.0	149.5	151.6	157.0
40	218.9	163.9	162.3	162.2	162.8	164.0	172.6	146.9	149.0	150.4	152.6	157.7
41	219.9	165.6	162.6	162.4	162.2	164.2	175.3	148.0	150.1	151.4	153.2	158.4
42	220.2	169.3	162.9	162.6	163.5	164.4	178.1	149.2	151.1	152.4	154.0	159.2
43	221.7	173.7	163.3	162.9	164.1	164.6	180.9	150.1	151.8	153.4	155.1	160.0
44	222.4	178.7	164.1	163.2	164.7	164.6	183.8	150.8	152.8	154.2	156.2	160.7
45	222.9	186.7	164.6	163.6	165.1	164.8	186.7	151.7	153.5	155.1	157.2	161.4
46	223.8	196.7	165.6	163.9	165.5	165.1	189.6	152.5	154.3	156.0	158.0	162.2
47	224.9	205.7	167.2	164.0	165.6	165.3	192.3	153.2	154.9	156.6	158.6	162.8
48	225.8	211.9	169.7	164.3	165.9	165.4	195.1	154.2	155.7	157.3	159.2	163.2
49	226.8	216.1	176.4	164.7	166.2	165.6	198.0	155.0	156.7	158.2	159.7	163.7
50	227.6	219.0	187.7	165.2	166.5	165.8	200.8	155.6	157.5	158.9	160.4	164.2
51	228.3	220.5	200.9	165.9	166.6	165.9	203.6	156.8	158.1	159.7	161.2	164.7
52	229.5	222.3	210.7	166.8	166.4	166.1	206.3	158.4	158.6	160.3	161.8	165.2
53	230.6	224.3	216.6	168.3	166.3	166.1	209.0	159.8	159.3	160.8	162.4	165.5
54	231.6	226.1	220.0	172.7	166.4	166.3	211.5	163.3	159.6	161.7	162.9	165.9

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856625	856626	856627	856628	856629	856630	856619	856620	856621	856622	856623	856624
Date	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09
Distillation, D86 (^{o}F)												
55	232.5	227.0	222.3	184.4	166.7	166.6	214.1	170.2	160.1	162.0	163.3	166.3
56	232.9	228.5	224.3	200.3	167.0	166.5	216.7	179.1	161.3	163.0	163.8	166.6
57	234.1	229.5	226.3	212.7	167.8	166.7	219.3	189.1	161.8	163.7	164.2	167.0
58	234.9	230.4	228.1	219.2	168.0	166.9	221.9	198.2	161.8	165.1	164.5	167.4
59	235.9	230.6	229.5	222.5	168.8	167.2	224.5	205.8	164.6	165.9	165.1	167.6
60	237.1	230.3	230.9	224.7	169.2	167.3	226.9	211.8	172.1	167.5	165.6	167.9
61	237.8	232.5	232.0	226.9	172.6	167.4	229.5	215.9	184.1	168.6	166.0	168.1
62	238.9	234.5	233.4	229.0	182.8	167.5	232.0	219.4	197.1	171.4	166.5	168.5
63	240.0	235.7	235.3	230.7	205.2	167.7	234.4	223.7	209.3	174.8	167.1	169.0
64	240.9	236.9	236.8	232.8	220.8	167.8	236.8	227.3	218.3	181.8	167.1	169.2
65	242.0	237.8	237.8	235.0	226.1	168.0	239.1	230.3	223.9	201.8	167.9	169.4
66	243.2	238.6	237.9	236.8	229.1	168.1	241.6	233.8	228.1	217.3	168.2	169.7
67	244.1	238.7	236.7	238.3	232.2	168.3	244.4	236.8	231.1	226.5	168.9	170.0
68	245.6	239.2	236.0	239.1	234.7	168.5	246.7	239.3	234.3	231.0	169.5	170.3
69	247.1	240.8	238.1	239.2	236.7	168.6	249.2	242.1	238.4	236.3	170.2	170.6
70	248.5	243.2	241.4	239.5	238.2	168.9	252.0	245.0	242.6	240.3	172.6	170.7
71	249.9	244.8	243.5	241.2	240.2	169.6	254.4	247.6	245.8	243.8	190.7	171.1
72	251.6	246.2	244.1	241.7	242.4	170.0	257.1	248.7	248.4	246.8	227.6	171.5
73	253.4	247.9	243.8	242.8	244.7	169.8	260.1	251.1	250.8	250.3	236.7	171.8
74	255.3	249.5	245.2	244.6	247.0	170.0	263.2	255.9	253.9	252.9	241.6	172.1
75	257.0	250.8	248.0	246.5	247.4	171.0	266.1	259.2	257.0	255.4	246.7	172.4
76	259.3	252.3	251.4	248.5	247.1	180.1	269.4	262.4	259.6	258.1	250.9	173.1
77	262.3	254.7	254.4	250.2	250.7	213.3	272.7	266.3	262.7	261.5	255.6	174.4
78	264.9	257.8	257.2	252.6	252.9	235.6	275.5	270.1	266.9	265.5	260.6	174.1
79	267.7	260.5	259.7	255.4	253.6	240.8	278.2	273.3	271.1	265.6	264.8	174.4
80	270.5	263.3	261.6	258.4	256.0	245.4	280.8	276.4	274.8	269.5	268.8	202.0
81	273.7	266.7	264.1	261.6	258.9	249.9	283.8	280.1	278.4	275.4	271.9	247.6
82	277.8	270.0	267.5	264.8	262.7	254.1	287.7	283.7	281.6	280.1	274.3	262.5
83	282.1	273.4	270.9	268.1	266.7	258.4	291.7	287.1	284.7	284.7	277.5	268.4
84	286.0	277.1	274.7	272.0	268.9	262.4	295.2	290.6	288.2	288.2	282.5	273.6
85	290.0	280.9	279.2	276.2	270.7	266.2	298.8	294.1	292.4	292.0	287.1	278.2
86	294.6	285.8	284.2	280.7	272.8	270.2	302.2	297.9	296.6	295.8	291.6	282.6
87	298.9	290.7	288.6	285.7	280.0	274.9	305.3	300.9	300.6	299.3	295.4	287.7
88	303.5	295.5	293.6	290.6	286.1	280.3	307.8	303.9	303.9	302.9	298.6	292.1
89	308.2	300.5	299.3	296.0	293.2	285.7	310.4	308.5	306.5	306.7	304.3	296.5
90	312.6	305.9	304.6	301.1	299.8	291.1	315.0	313.4	309.9	310.5	308.2	301.4
91	316.7	311.2	309.6	306.3	306.1	297.3	319.3	317.3	314.1	314.4	312.8	306.2
92	320.9	316.0	315.0	311.9	311.5	304.8	323.9	321.1	318.8	317.4	316.3	310.7
93	323.7	321.2	319.9	317.4	316.5	311.7	327.7	325.2	324.0	322.1	321.4	315.6
94	331.5	327.1	324.3	322.7	321.9	317.7	332.0	329.0	328.8	327.1	326.5	321.1
95	339.6	332.7	329.5	328.9	329.6	323.4	336.9	333.7	334.0	332.9	331.3	326.5
96	346.9	338.8	337.8	336.9	337.2	330.2	342.8	340.1	340.0	338.8	337.2	333.3
97	359.2	349.8	348.6	346.4	346.4	339.4	349.9	348.5	347.4	345.9	345.6	341.9
98		363.5	363.0	361.2	357.1	353.1	361.5	361.8	359.8	357.4	357.6	354.2
99										364.4		
FBP	388.0	378.9	378.8	376.5	373.3	366.8	379.6	373.9	370.4	369.3	365.6	364.4
Recovered (%)	96.0	94.9	95.6	95.2	95.6	95.9	98.2	98.0	97.1	97.7	98.1	97.9
Residue (%)	1.0	0.7	0.8	0.7	0.8	0.8	0.5	0.8	0.8	0.7	1.0	0.8
Loss (%)	3.0	4.4	3.6	4.1	3.6	3.3	1.3	1.2	2.1	1.6	0.9	1.3
$T_{V/L=20}$ (^{o}F)	121.1	112.8	112.5	115.2	116.5	119.1	120.2	112.9	112.0	113.5	114.0	119.7
RON												
MON												
(R+M)/2												

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856637	856638	856639	856640	856641	856642	856631	856632	856633	856634	856635	856636
Date	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09
Dry Vapor Pressure Equivalent (psi)	12.39	13.31	13.09	13.10	13.05	12.52	13.01	13.75	13.58	13.60	13.38	12.99
Specific Gravity	0.7097	0.7174	0.7193	0.7213	0.7251	0.7338	0.7249	0.7314	0.7333	0.7346	0.7381	0.7447
Ethanol (Vol%)	0.00	10.71	13.33	15.80	20.47	31.35	0.10	10.86	13.62	15.66	20.59	30.59
Ethanol (Wt%)	0.00	11.86	14.71	17.39	22.41	33.92	0.11	11.78	14.74	16.92	22.14	32.61
Distillation, D86 (^{o}F)												
IBP	80.4	84.3	81.2	83.3	86.0	85.2	80.1	79.5	80.8	80.9	81.7	82.8
1	83.6	86.9	86.4	87.2	89.1	88.7	83.4	83.1	85.0	81.4	85.9	86.9
2	86.9	89.5	91.6	91.0	92.2	92.3	86.7	86.7	89.2	81.9	90.0	91.0
3	90.2	92.1	95.1	94.8	95.4	97.4	90.0	90.2	92.9	90.4	94.0	95.6
4	93.5	94.8	97.6	98.0	98.2	101.7	93.2	93.4	95.7	94.5	96.9	99.1
5	96.2	97.4	99.9	100.2	100.7	104.0	96.0	95.9	98.2	97.1	99.4	101.9
6	98.6	99.4	102.1	102.3	103.1	106.5	98.4	98.1	100.4	99.6	101.6	104.2
7	100.8	101.6	103.6	104.2	105.3	108.7	100.6	100.1	102.1	101.4	103.6	106.4
8	102.7	103.6	105.3	105.8	107.3	111.0	102.6	101.9	103.7	103.1	105.4	108.5
9	104.6	105.2	107.1	107.5	109.0	112.9	104.3	103.6	105.3	104.7	107.1	110.5
10	106.6	106.7	108.7	109.2	110.6	114.8	106.1	105.1	106.9	106.2	108.9	112.6
11	108.5	108.3	110.2	110.8	112.4	116.7	107.9	106.6	108.5	107.7	110.5	114.0
12	110.4	110.0	111.9	112.3	114.0	118.4	109.6	108.2	110.0	109.3	112.0	115.8
13	112.1	111.4	113.4	113.8	115.5	120.0	111.4	109.7	111.5	110.8	113.6	117.8
14	113.8	112.6	114.7	115.3	117.3	122.0	113.1	111.1	112.8	112.2	114.9	119.5
15	115.7	114.1	116.5	116.7	118.9	123.7	114.8	112.5	114.2	113.6	116.5	121.0
16	117.6	115.5	118.0	118.2	120.3	125.5	116.7	113.8	115.6	115.2	118.4	122.5
17	119.5	116.9	119.2	119.9	121.9	127.2	118.4	115.2	116.8	116.6	119.9	124.3
18	121.6	118.6	120.7	121.5	123.6	129.0	120.2	116.8	118.3	118.2	121.5	126.1
19	123.6	120.0	122.5	123.0	125.3	130.7	122.1	118.2	119.8	119.6	123.1	127.8
20	125.5	121.4	123.6	124.3	126.9	132.5	124.1	119.5	121.3	120.8	124.3	129.8
21	127.6	122.9	125.1	125.9	128.5	134.1	126.1	121.1	122.7	122.4	125.6	131.3
22	129.9	124.3	126.7	127.5	130.1	136.0	128.0	122.4	124.1	123.8	127.3	133.0
23	132.0	125.7	128.2	129.3	131.6	137.7	129.9	123.8	125.5	125.4	129.0	134.6
24	134.2	127.2	130.0	130.9	133.1	139.0	132.0	125.2	127.0	126.9	130.3	136.0
25	136.6	128.7	131.3	132.3	134.5	140.8	134.1	126.7	128.5	128.4	131.7	137.7
26	139.2	130.2	132.7	133.9	136.0	142.1	136.1	128.0	129.7	129.8	133.2	139.1
27	141.5	131.6	134.1	135.2	137.5	143.5	138.3	129.4	131.1	131.3	134.3	140.4
28	144.1	133.0	135.6	136.6	139.0	144.9	140.6	130.6	132.5	132.9	135.9	141.8
29	146.7	134.4	136.8	137.9	140.5	146.1	142.7	132.0	133.9	134.1	137.1	143.1
30	149.1	135.9	138.5	139.1	141.8	147.4	144.8	133.2	135.1	135.5	138.4	144.7
31	151.7	137.3	139.8	140.7	143.2	148.5	146.8	134.4	136.1	136.7	139.6	145.9
32	154.4	138.4	141.0	142.0	144.5	149.7	148.9	135.8	137.4	137.9	141.2	146.8
33	157.3	139.7	142.3	143.2	145.6	150.7	151.3	137.0	138.8	139.3	142.1	148.1
34	159.8	141.1	143.3	144.4	146.8	151.8	153.7	138.3	140.0	140.5	143.3	149.1
35	162.3	142.2	144.6	145.4	148.0	152.8	155.8	139.8	141.1	141.7	144.7	150.1
36	165.1	143.4	145.6	146.6	149.1	153.6	158.0	140.9	142.2	142.9	145.9	151.0
37	167.9	144.4	146.8	147.7	150.1	154.4	160.3	141.9	143.4	143.6	146.7	151.9
38	170.5	145.5	147.9	148.7	151.1	155.4	162.6	142.9	144.4	144.4	147.6	152.9
39	173.2	146.5	148.6	149.8	152.0	156.2	165.0	143.9	145.5	145.4	148.6	153.6
40	175.9	147.5	149.2	150.7	152.9	157.0	167.3	144.9	146.4	146.5	149.5	154.3
41	178.4	148.5	150.4	151.5	153.7	157.7	169.6	146.0	147.5	147.5	150.6	155.3
42	181.2	149.4	151.5	152.3	154.5	158.4	172.0	146.8	148.5	148.5	151.4	156.2
43	183.9	150.2	152.5	153.3	155.4	159.1	174.2	147.8	149.5	149.5	152.4	157.0
44	186.6	151.0	153.2	154.0	156.1	159.5	176.7	148.8	150.4	150.4	153.2	157.9
45	189.3	151.8	153.8	154.8	156.8	160.1	178.9	149.8	151.2	150.9	153.7	158.4
46	191.8	152.4	154.7	155.4	157.4	160.8	181.1	150.7	152.1	151.9	154.5	159.1
47	194.2	153.2	155.4	156.0	158.0	161.2	183.4	151.6	152.8	152.7	155.3	159.8
48	196.8	153.7	155.9	156.9	158.6	161.7	185.7	152.4	153.0	153.2	156.1	160.3
49	199.3	154.7	156.6	157.5	159.1	162.2	188.0	153.1	153.4	154.0	156.8	160.2
50	201.8	155.6	157.4	158.0	159.6	162.6	190.4	154.0	154.7	155.1	157.4	161.5
51	204.3	156.5	158.1	158.6	160.1	163.0	192.6	154.9	155.5	155.8	158.1	162.3
52	206.8	157.6	158.8	159.3	160.6	163.3	195.1	155.8	156.3	156.4	158.6	162.8
53	209.1	159.0	159.3	159.7	161.2	163.8	197.5	156.8	157.1	157.2	159.1	163.1
54	211.6	163.1	159.7	160.3	161.6	164.1	199.7	158.0	158.0	157.9	159.8	163.6

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856637	856638	856639	856640	856641	856642	856631	856632	856633	856634	856635	856636
Date	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09
Distillation, D86 (^{o}F)												
55	213.8	171.1	160.5	160.7	162.1	164.4	202.1	159.4	158.7	158.3	160.3	164.1
56	215.9	182.2	161.6	161.0	162.6	164.8	204.4	161.8	159.4	159.1	160.8	164.4
57	218.2	191.8	162.3	161.7	163.1	165.2	206.8	165.6	160.2	159.5	161.2	164.9
58	220.5	200.4	164.6	162.2	163.5	165.5	209.2	170.7	160.9	160.1	161.9	165.2
59	222.5	206.9	168.7	161.9	163.8	165.8	211.4	177.2	161.9	160.8	162.2	165.6
60	224.7	211.7	179.6	162.7	164.1	166.1	213.8	185.7	163.1	161.2	162.8	166.0
61	226.8	215.3	196.0	163.3	164.6	166.4	216.4	194.4	164.5	161.8	163.3	166.4
62	229.2	218.4	207.8	163.3	165.0	166.7	218.8	201.2	167.3	162.4	163.7	166.8
63	231.1	221.6	214.9	164.5	165.4	167.1	221.1	206.8	173.3	163.0	164.3	167.1
64	233.1	224.2	219.3	172.6	165.9	167.2	223.3	211.8	183.6	163.5	164.6	167.5
65	234.9	226.3	222.6	191.9	166.2	167.5	225.6	215.7	196.8	163.6	164.8	167.8
66	237.0	228.6	226.2	211.8	166.6	167.9	228.1	218.9	207.5	166.5	165.4	168.1
67	239.1	230.5	228.0	219.4	166.9	167.9	230.6	222.0	214.1	171.0	165.9	168.3
68	241.2	233.3	230.7	224.6	167.4	168.2	233.2	224.8	218.9	185.9	166.2	168.8
69	243.2	236.4	234.2	228.0	168.0	168.6	236.0	227.9	223.1	204.3	166.5	169.0
70	245.1	239.4	236.7	231.0	167.9	168.8	238.6	231.2	226.6	215.7	166.8	169.2
71	247.6	241.3	238.9	233.6	167.8	169.2	241.2	233.6	229.7	222.1	167.5	169.5
72	250.3	242.2	241.9	237.0	186.2	169.6	243.7	235.4	232.8	226.4	168.9	169.8
73	252.7	239.9	244.2	240.3	214.8	169.7	246.1	236.9	236.3	230.1	169.2	170.2
74	255.4	242.9	246.7	243.5	231.1	170.0	249.0	239.3	238.7	234.2	183.0	170.5
75	258.1	249.3	248.9	247.0	238.0	170.3	251.7	242.3	240.3	237.7	219.5	170.9
76	260.8	254.2	247.1	250.4	243.1	170.6	254.3	246.7	242.4	241.2	228.7	171.3
77	263.5	257.5	252.0	253.4	247.4	171.0	257.2	251.1	246.2	244.0	234.8	171.6
78	266.3	258.0	257.9	257.7	250.7	171.5	260.5	254.9	250.5	247.7	240.3	171.8
79	269.5	256.1	262.3	261.0	254.3	171.6	263.5	258.6	254.8	251.1	245.0	172.4
80	273.1	262.4	266.5	263.6	258.1	171.9	266.9	262.0	258.6	254.2	250.6	173.1
81	277.1	268.7	269.9	266.3	262.2	170.8	270.8	264.9	261.3	256.6	255.5	173.9
82	281.0	274.3	273.4	269.6	266.4	215.1	274.8	268.2	264.0	260.8	259.6	175.8
83	284.8	279.0	277.3	272.8	271.0	246.9	279.0	272.3	268.4	264.0	263.7	227.8
84	289.5	283.1	281.8	276.4	274.4	258.4	283.2	277.1	273.7	267.4	267.0	250.3
85	294.0	287.3	286.6	281.7	277.8	266.1	288.1	282.4	278.6	273.2	270.7	257.0
86	298.3	291.6	291.3	288.3	282.9	273.6	293.4	288.0	283.7	278.5	275.1	263.6
87	302.8	296.9	296.5	294.1	288.3	280.5	298.1	293.2	289.1	283.1	280.3	271.9
88	307.2	302.1	302.3	299.8	294.8	286.7	302.9	298.4	294.2	290.5	287.6	279.7
89	311.9	306.9	308.2	305.2	301.7	294.7	308.7	303.9	300.6	298.4	295.4	287.2
90	315.8	312.1	313.5	310.4	307.7	301.4	315.9	310.3	308.1	303.3	303.2	294.4
91	319.2	317.2	317.7	315.2	313.4	307.9	321.3	316.0	315.2	310.6	310.3	301.8
92	323.9	321.3	321.5	320.7	318.5	313.2	327.3	320.2	321.1	317.7	315.5	309.5
93	328.6	324.5	325.9	322.8	323.4	318.3	333.3	323.3	325.5	324.7	320.6	317.3
94	333.4	329.9	331.4	329.1	328.0	323.1	337.9	331.6	330.0	330.5	328.3	323.8
95	337.9	335.3	336.9	334.0	333.0	329.0	343.1	339.6	337.0	336.3	335.3	330.6
96	343.0	341.1	342.0	339.6	338.9	335.4	349.9	347.8	345.0	343.9	342.9	338.0
97	350.3	348.0	349.3	346.7	346.2	342.7	361.3	358.1	356.0	354.3	352.9	347.4
98	361.6	357.3	363.8	358.8	358.2	354.9	377.2	371.7	369.0	369.6		363.7
99												
FBP	376.9	368.8	371.0	370.1	367.6	365.8	384.9	383.2	378.0	378.6	378.9	370.9
Recovered (%)	98.1	97.0	98.1	97.7	97.3	98.2	97.1	96.9	97.7	98.1	97.5	98.0
Residue (%)	0.5	0.9	1.0	0.8	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.0
Loss (%)	1.4	2.1	0.9	1.5	1.9	1.0	1.9	2.1	1.3	0.9	1.5	1.0
$T_{V/L=20}$ (^{o}F)	119.5	110.6	112.2	112.0	114.1	115.7	114.7	108.9	110.0	110.6	110.7	114.2
RON												
MON												
(R+M)/2												

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856649	856650	856651	856652	856653	856654	856643	856644	856645	856646	856647	856648
Date	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09
Dry Vapor Pressure Equivalent (psi)	13.60	14.45	14.13	14.34	14.07	13.57	13.81	14.55	14.28	14.41	14.25	13.71
Specific Gravity	0.7166	0.7240	0.7260	0.7278	0.7314	0.7390	0.7293	0.7351	0.7366	0.7383	0.7411	0.7482
Ethanol (Vol%)	0.00	10.20	13.26	15.56	20.52	31.03	0.00	10.35	12.57	15.37	20.03	31.33
Ethanol (Wt%)	0.00	11.19	14.50	16.97	22.28	33.34	0.00	11.17	13.55	16.53	21.46	33.24
Distillation, D86 (^{o}F)												
IBP	79.0	79.8	80.0	80.0	81.4	83.2	78.9	81.1	80.4	81.0	82.0	84.5
1	81.0	82.0	82.3	80.4	83.7	86.1	81.1	83.2	82.5	81.4	84.0	87.4
2	83.0	84.1	84.5	80.7	86.1	89.0	83.4	85.4	84.7	81.8	86.0	90.2
3	85.1	86.2	86.8	81.0	88.5	91.8	85.6	87.5	86.9	85.8	88.1	93.1
4	87.1	88.4	89.0	82.3	90.9	94.7	88.1	89.7	89.0	91.2	91.5	96.1
5	90.1	90.5	91.2	92.5	94.2	98.4	90.7	91.8	91.9	93.9	94.6	98.8
6	93.3	93.1	94.6	95.5	98.1	102.2	92.8	93.9	94.3	96.3	97.1	101.2
7	95.9	96.1	97.9	98.4	100.9	105.0	94.8	96.1	96.4	98.4	99.4	103.3
8	98.3	98.8	100.7	100.9	103.4	107.8	96.7	97.9	98.5	100.2	101.7	105.5
9	100.6	101.0	103.1	103.3	106.0	110.5	98.6	99.6	100.3	101.9	103.8	107.6
10	102.9	103.2	105.6	105.5	108.1	112.9	100.2	101.2	102.2	103.5	105.2	109.6
11	105.2	105.3	107.8	107.5	110.4	115.3	102.1	103.0	103.8	105.0	107.1	111.7
12	107.4	107.3	109.7	109.7	112.6	117.9	104.0	104.5	105.3	106.7	108.8	113.7
13	109.6	109.4	111.8	111.3	114.5	120.2	105.8	106.2	106.9	108.4	110.6	115.6
14	111.8	111.4	113.6	113.2	116.8	122.7	107.5	107.8	108.5	109.8	112.3	117.2
15	114.0	113.2	115.8	115.3	119.1	125.3	109.2	109.4	110.1	111.3	114.0	119.0
16	116.4	115.2	117.8	117.5	121.1	127.6	110.8	110.7	111.8	113.0	115.8	121.1
17	118.8	117.2	120.1	119.6	123.0	130.0	112.6	112.2	113.4	114.5	117.4	123.1
18	121.4	119.2	122.0	121.6	125.2	132.4	114.5	113.6	114.8	116.1	118.9	125.2
19	124.1	121.2	124.0	123.6	127.4	134.7	116.7	115.2	116.4	117.8	120.5	127.0
20	126.8	123.2	125.9	125.7	129.6	136.9	118.6	116.7	118.1	119.5	122.4	128.9
21	129.5	125.2	127.8	127.8	131.7	139.3	120.7	118.1	119.7	121.2	124.1	130.8
22	132.2	127.0	130.0	129.8	133.5	141.3	122.7	119.7	121.2	122.8	125.9	132.6
23	135.3	128.9	131.9	132.2	135.7	143.0	124.5	121.6	122.7	124.5	127.9	134.2
24	138.8	131.1	133.8	134.3	137.9	145.0	126.8	123.1	124.2	126.0	129.7	135.6
25	141.9	133.2	136.0	136.2	139.9	146.7	129.0	124.6	125.9	127.6	131.3	137.3
26	145.1	135.2	138.1	137.8	141.7	148.3	131.3	126.2	127.6	129.4	132.7	139.3
27	148.4	137.3	139.6	140.0	143.3	149.8	133.7	127.9	129.3	131.1	134.3	141.1
28	151.6	139.2	141.3	141.8	144.8	151.2	136.1	129.4	131.0	132.6	135.9	142.7
29	154.7	140.8	142.9	143.5	146.4	152.6	138.6	131.0	132.5	134.2	137.4	144.0
30	157.9	142.5	144.6	145.1	148.0	153.4	141.1	132.4	134.0	135.7	138.9	145.5
31	161.5	144.0	146.1	146.6	149.5	154.6	143.8	134.0	135.4	137.2	140.4	147.1
32	165.5	145.4	147.4	148.0	150.7	155.7	146.4	135.5	136.9	138.7	141.8	148.3
33	169.3	147.0	148.7	149.3	151.8	156.6	149.1	136.7	138.4	140.0	143.2	149.6
34	172.8	148.5	150.1	150.7	152.9	157.5	151.8	138.2	139.8	141.4	144.5	150.6
35	176.2	149.9	151.2	151.9	153.8	158.2	154.2	139.5	141.2	142.8	145.7	151.5
36	179.7	151.1	152.4	152.9	154.6	158.9	156.8	140.8	142.6	144.0	146.9	152.6
37	183.4	152.2	153.3	153.6	155.3	159.5	159.4	142.3	143.8	145.0	148.1	153.7
38	186.9	153.3	154.5	154.6	156.4	160.1	161.9	143.5	144.9	146.2	149.2	154.7
39	190.0	154.3	155.3	155.2	157.4	160.7	164.4	144.6	146.1	147.3	150.2	155.6
40	193.0	155.1	156.1	155.9	158.2	161.3	167.3	145.6	147.2	148.3	151.2	156.4
41	195.9	155.9	156.8	156.6	158.9	161.6	170.1	146.7	148.3	149.5	151.9	157.3
42	198.8	156.9	157.7	157.5	159.4	161.9	172.9	147.9	149.3	150.6	152.8	158.1
43	201.5	157.8	158.4	158.2	160.0	162.4	175.8	149.0	150.4	151.4	153.8	158.8
44	204.1	158.5	159.0	159.1	160.1	162.7	178.6	149.8	151.4	152.1	154.5	159.6
45	206.7	159.0	159.6	159.5	160.3	163.0	181.2	151.1	152.4	153.0	155.4	160.4
46	208.9	160.1	160.2	160.2	161.2	163.3	183.8	152.2	153.4	154.2	156.4	160.9
47	211.1	161.4	160.7	160.6	161.8	163.7	186.6	152.9	154.1	155.3	157.3	161.6
48	213.0	162.8	161.4	161.2	162.4	164.1	189.4	153.9	154.7	156.2	158.1	162.2
49	214.6	164.3	162.0	161.7	162.8	164.2	192.0	154.9	155.6	157.0	159.0	162.7
50	216.6	167.3	162.4	162.3	163.1	164.5	194.7	155.5	156.6	157.8	159.6	163.1
51	218.3	174.2	162.9	162.5	163.5	164.6	197.4	156.4	157.6	158.6	160.2	163.7
52	219.3	184.2	164.3	163.1	163.9	164.7	200.1	157.3	158.4	159.4	160.8	164.0
53	220.8	195.3	166.0	163.5	164.1	164.9	203.2	158.4	159.1	159.9	161.4	164.4
54	222.9	204.6	167.4	163.8	164.5	165.3	206.0	160.2	159.8	160.3	162.0	164.9

ASTM Class	E	E	E	E	E	E	E	E	E	E	E	E
State	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	856649	856650	856651	856652	856653	856654	856643	856644	856645	856646	856647	856648
Date	2/13/09	3/12/09	3/12/09	3/12/09	3/12/09	3/12/09	2/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09
Distillation, D86 (^{o}F)												
55	224.5	211.2	169.9	164.2	164.7	165.8	208.6	162.6	160.5	160.8	162.4	165.4
56	224.6	215.7	177.5	164.7	165.1	166.2	211.4	165.9	161.3	161.4	163.0	165.9
57	224.3	219.0	191.6	165.6	165.3	166.5	214.3	171.5	162.3	162.1	163.6	166.2
58	223.3	221.6	205.1	165.9	165.5	166.7	217.1	178.9	163.8	162.6	164.0	166.6
59	225.0	223.5	214.3	166.5	165.9	166.9	219.9	188.6	165.6	163.0	164.5	166.9
60	229.9	225.2	219.1	169.7	166.2	167.0	222.4	197.4	167.9	163.5	165.0	167.3
61	233.3	227.4	222.0	184.0	166.4	167.1	225.0	205.6	172.0	164.4	165.4	167.7
62	235.3	229.4	225.1	204.5	166.8	167.2	227.8	211.3	181.9	164.8	165.7	167.9
63	237.0	231.1	227.7	218.1	167.2	167.3	230.6	216.3	196.5	165.3	166.2	168.2
64	238.1	233.1	229.8	223.2	167.6	167.6	233.3	220.5	208.7	167.1	166.6	168.5
65	238.7	234.1	231.7	226.0	168.1	167.8	236.1	224.1	217.1	173.5	167.0	168.7
66	239.6	234.1	232.7	228.4	168.8	168.0	238.9	228.3	223.4	190.2	167.5	169.1
67	240.6	235.2	233.6	230.5	172.3	168.2	241.7	231.6	228.3	209.5	167.9	169.4
68	241.7	235.9	235.5	232.5	186.0	168.3	244.4	234.4	232.4	220.8	168.4	169.7
69	243.0	237.0	237.5	234.8	210.0	168.6	247.3	237.6	235.6	226.6	169.3	170.0
70	244.4	239.0	239.5	236.6	225.6	168.8	249.8	240.4	239.0	231.1	171.8	170.3
71	245.8	239.4	240.3	238.4	230.6	168.8	252.3	242.3	242.6	234.4	175.7	170.7
72	247.4	241.5	239.3	240.2	233.0	169.0	255.3	244.6	245.8	237.9	199.4	170.9
73	249.2	244.5	240.3	242.6	234.8	169.2	258.4	248.3	248.7	242.5	224.9	171.3
74	251.2	247.2	242.4	244.5	237.0	169.4	261.1	252.3	251.6	247.4	236.2	171.7
75	253.0	250.0	245.7	247.1	240.0	169.8	263.9	256.0	255.0	251.6	241.2	172.0
76	255.1	252.2	249.0	248.5	243.2	169.9	266.8	259.2	257.4	254.8	246.0	172.4
77	257.2	253.9	251.6	248.1	246.1	170.1	269.8	261.8	256.4	257.0	251.0	172.7
78	259.5	255.0	253.7	249.2	249.0	170.6	272.5	264.4	258.0	259.0	255.4	173.4
79	261.9	256.1	254.4	251.4	251.7	169.8	275.2	267.9	263.0	262.3	259.2	173.6
80	264.1	256.9	255.5	253.2	254.2	198.4	278.1	271.8	268.5	267.0	262.5	174.1
81	267.1	256.9	256.4	257.2	256.3	236.1	281.3	274.6	273.1	271.4	266.7	217.5
82	270.6	259.9	259.6	261.6	257.9	244.6	284.7	277.9	276.8	273.4	271.3	253.6
83	274.3	266.5	264.4	265.3	259.7	248.9	288.5	281.0	280.6	275.3	275.3	262.1
84	278.0	271.6	269.0	267.5	263.1	253.0	292.3	285.4	284.3	279.3	278.1	267.4
85	282.3	275.8	273.5	264.7	266.7	257.5	295.6	289.1	288.0	284.4	280.8	272.2
86	286.9	280.1	278.0	272.1	270.4	262.1	299.5	292.8	291.8	289.9	284.5	277.6
87	291.8	284.5	282.5	278.4	275.2	267.0	303.9	297.0	296.3	295.1	290.0	282.5
88	297.2	289.6	287.1	284.2	280.0	272.0	308.5	302.0	300.5	300.1	295.3	287.3
89	303.3	294.8	292.9	290.3	285.1	278.1	312.3	305.4	305.4	305.1	300.7	292.1
90	309.7	300.0	298.9	295.9	291.3	283.1	316.7	308.1	311.0	311.2	306.9	298.1
91	316.2	306.2	305.1	302.3	298.4	290.0	323.2	316.3	316.7	317.2	312.6	304.1
92	323.2	313.3	312.0	310.1	306.5	297.5	330.4	324.3	323.0	323.2	318.2	309.8
93	330.1	319.6	319.9	318.7	315.2	305.9	337.5	330.8	327.5	329.4	324.3	316.4
94	336.9	327.5	328.8	327.6	324.0	315.5	345.6	336.9	334.7	334.3	330.5	323.9
95	344.8	338.7	335.7	335.7	333.1	324.9	353.9	343.7	343.8	341.2	339.3	332.0
96	355.3	348.7	346.3	345.2	342.7	335.8	364.0	350.3	353.8	352.0	350.8	341.9
97	369.4	361.4	358.8	358.2	354.0	349.1	377.5	364.9	367.1	366.1	364.0	355.5
98	389.5	377.4	378.1		370.4	368.6	394.6	383.8	382.9	385.7	383.2	376.0
99												
FBP	401.6	388.0	387.0	386.8	384.2	377.6	405.8	401.6	396.0	397.9	399.2	389.3
Recovered (%)	96.3	95.6	95.8	96.8	96.3	96.7	97.0	96.3	96.6	97.8	97.2	97.2
Residue (%)	1.0	0.9	1.0	1.0	0.9	0.9	1.0	0.8	0.8	1.0	0.9	0.9
Loss (%)	2.7	3.5	3.2	2.2	2.8	2.4	2.0	2.9	2.6	1.2	1.9	1.9
$T_{V/L=20}$ (^{o}F)	112.6	107.8	107.9	109.0	110.8	113.2	110.8	106.0	106.4	107.1	108.3	110.7
RON												
MON												
(R+M)/2												

Refiner BOB	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	859062	864721	864722	864723	864724	864725	859063	864726	864727	864728	864729	864730
Date	2/19/09	4/2/09	4/2/09	4/2/09	4/2/09	4/2/09	2/19/09	4/2/09	4/2/09	4/2/09	4/2/09	4/2/09
Dry Vapor Pressure Equivalent (psi)	11.66	12.54	12.23	12.36	12.06	11.84	10.88	11.52	11.47	11.26	11.23	10.82
Specific Gravity	0.7195	0.7304	0.7320	0.7330	0.7361	0.7448	0.7506	0.7573	0.7610	0.7634	0.7626	0.7686
Ethanol (Vol%)	0.00	10.33	12.61	15.25	20.75	30.84	0.00	10.03	12.94	15.53	20.27	30.38
Ethanol (Wt%)	0.00	11.23	13.67	16.52	22.37	32.87	0.00	10.51	13.50	16.15	21.10	31.38
Distillation, D86 (^{o}F)												
IBP	88.0	86.4	84.2	84.9	87.2	87.0	87.2	85.8	88.1	86.4	91.7	90.3
1	90.0	89.3	88.9	88.2	90.6	90.7	90.3	89.9	91.7	90.0	95.1	94.1
2	91.9	92.2	93.7	91.5	94.0	94.4	93.3	94.1	95.3	93.7	98.6	98.0
3	93.8	95.1	97.4	94.8	97.3	98.1	96.3	98.2	98.9	97.3	102.0	101.9
4	96.0	97.8	100.0	98.0	100.4	101.4	99.4	102.4	102.4	102.1	105.9	105.9
5	99.1	100.1	102.1	100.7	102.9	104.2	104.1	105.9	105.7	106.3	109.8	110.2
6	101.5	101.9	103.8	103.0	105.0	106.4	107.9	108.5	108.9	109.4	112.6	113.5
7	103.4	103.8	105.4	104.9	106.8	108.5	111.3	110.9	112.0	112.4	115.3	116.7
8	105.1	105.5	106.9	106.6	108.6	110.9	114.4	113.5	114.6	114.9	117.9	120.0
9	107.0	107.1	108.4	108.1	110.3	112.9	117.5	115.7	116.9	117.6	120.3	122.4
10	108.7	108.4	109.9	109.6	111.6	114.7	120.3	117.6	119.3	119.9	122.5	125.2
11	110.3	109.8	111.3	111.2	113.0	116.5	123.1	119.9	121.4	122.0	124.9	128.0
12	111.9	111.2	112.6	112.6	114.4	118.1	125.4	122.3	123.4	124.2	127.4	130.6
13	113.4	112.5	114.0	113.9	115.9	119.9	127.9	124.5	125.3	126.5	129.7	132.9
14	114.9	113.8	115.3	115.3	117.1	121.5	130.9	126.5	127.9	128.8	131.9	135.3
15	116.3	115.0	116.5	116.9	118.5	122.9	134.0	128.6	130.1	131.2	134.1	138.0
16	117.9	116.3	117.9	118.2	119.9	124.4	137.2	130.7	132.1	133.2	136.0	140.3
17	119.5	117.5	119.2	119.5	121.3	126.1	140.9	132.7	134.0	135.3	138.1	142.4
18	121.4	118.6	120.6	120.9	122.8	127.8	144.2	134.7	136.3	137.3	140.2	144.1
19	123.0	119.9	122.0	122.3	124.0	129.3	147.5	136.7	138.0	139.4	142.1	146.2
20	124.5	121.3	123.0	123.4	125.5	131.0	151.0	138.3	139.9	141.2	144.0	148.1
21	126.4	122.6	124.2	124.7	126.7	132.2	154.3	140.2	141.8	143.0	145.5	149.3
22	128.3	123.9	125.6	126.2	128.1	133.7	157.7	142.3	143.7	144.8	146.9	150.5
23	130.0	125.1	126.9	127.5	129.6	135.5	161.1	143.8	145.0	146.3	148.4	151.8
24	131.9	126.4	128.3	128.8	131.4	137.1	164.8	145.1	146.8	147.9	149.8	153.0
25	133.8	127.6	129.6	130.2	132.5	138.3	168.1	146.7	148.1	149.3	150.9	154.1
26	135.9	128.8	131.0	131.6	133.7	139.7	171.5	148.2	149.1	150.4	152.0	154.9
27	138.0	130.1	132.2	132.8	134.9	141.1	174.8	149.3	150.6	151.5	152.9	155.8
28	139.9	131.4	133.2	134.0	136.6	142.5	177.9	150.4	151.6	152.5	153.8	156.8
29	141.8	132.7	134.4	135.3	137.9	143.8	180.8	151.5	152.7	153.5	154.6	157.3
30	143.6	134.0	135.7	136.5	139.0	144.8	183.9	152.5	153.5	154.2	155.4	158.0
31	145.4	135.1	136.9	137.7	140.2	146.0	186.7	153.4	154.4	154.9	156.2	158.7
32	147.6	136.3	138.1	138.8	141.6	147.4	189.5	154.2	155.4	155.7	157.0	159.1
33	149.9	137.5	139.3	139.9	142.6	148.5	192.2	154.7	155.9	156.4	157.7	159.9
34	152.2	138.7	140.4	141.2	143.7	149.5	194.4	155.3	156.6	157.1	158.2	160.4
35	154.5	139.9	141.6	142.4	144.9	150.6	197.1	156.3	157.4	157.8	158.7	160.8
36	156.6	141.1	142.7	143.4	145.7	151.8	199.3	157.0	157.9	158.3	159.3	161.2
37	159.2	142.0	143.7	144.3	147.0	152.8	201.4	157.9	158.5	158.7	159.8	161.7
38	161.6	143.1	144.7	145.4	148.2	153.7	203.5	158.7	159.1	159.2	160.4	162.1
39	163.9	144.0	145.8	146.6	149.2	154.6	206.0	159.4	159.5	159.6	160.9	162.6
40	166.2	145.0	146.9	147.6	150.2	155.6	208.0	160.2	160.1	160.2	161.3	162.9
41	169.0	146.1	147.8	148.6	151.2	156.3	210.0	162.2	160.8	160.7	161.6	163.2
42	171.4	147.1	148.7	149.5	151.7	157.1	211.9	165.7	161.4	161.0	162.0	163.5
43	174.2	148.1	149.7	150.4	152.8	157.9	214.1	169.9	161.9	161.2	162.3	163.8
44	177.0	149.2	150.7	151.3	153.9	158.3	216.4	175.3	162.4	161.7	162.7	164.2
45	179.6	149.9	151.5	152.1	154.9	159.2	218.7	182.1	163.6	162.1	163.0	164.6
46	182.1	150.7	152.4	152.9	155.5	159.9	220.5	189.4	165.2	162.4	163.2	164.9
47	184.9	151.7	153.3	153.6	156.3	160.4	222.6	197.1	166.8	162.6	163.7	165.2
48	187.5	152.6	153.9	154.4	157.0	161.3	224.3	204.3	169.8	163.3	164.1	165.6
49	190.4	153.2	154.6	155.1	157.8	161.8	226.5	209.9	175.2	163.8	164.3	165.9
50	193.2	154.0	155.3	155.9	158.5	162.3	228.9	214.5	182.9	164.0	164.5	166.1
51	196.0	154.8	155.8	156.8	159.0	162.9	230.9	218.0	193.3	164.6	165.0	166.4
52	198.9	155.6	156.0	157.6	159.8	163.3	232.9	220.9	203.5	165.9	165.5	166.7
53	201.9	156.7	156.5	158.2	160.5	163.8	234.9	223.6	211.6	170.3	165.7	167.1
54	204.9	158.3	157.6	158.8	161.1	164.3	236.8	226.2	217.8	177.6	166.0	167.3

Refiner BOB	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter	Winter
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	859062	864721	864722	864723	864724	864725	859063	864726	864727	864728	864729	864730
Date	2/19/09	4/2/09	4/2/09	4/2/09	4/2/09	4/2/09	2/19/09	4/2/09	4/2/09	4/2/09	4/2/09	4/2/09
Distillation, D86 (^{o}F)												
55	207.6	162.4	158.4	159.6	161.6	164.8	238.4	228.8	222.3	191.3	166.5	167.6
56	210.5	168.4	159.4	160.1	162.2	165.3	240.7	231.2	226.2	205.7	166.9	167.8
57	213.6	176.3	160.6	160.5	162.6	165.5	243.0	233.4	229.5	215.7	167.0	168.0
58	216.8	186.2	162.2	161.0	163.2	166.0	245.2	236.0	232.9	221.6	167.4	168.2
59	219.9	196.2	165.1	161.5	163.8	166.4	247.6	238.7	235.7	227.6	169.0	168.4
60	222.8	204.2	170.0	162.2	164.3	166.8	250.4	240.8	238.8	232.0	172.5	168.7
61	225.8	210.5	181.0	162.9	164.8	167.1	252.2	242.5	241.0	235.2	184.1	168.9
62	228.8	215.4	195.6	163.0	165.1	167.4	254.5	243.8	243.2	238.7	205.4	169.1
63	232.1	220.1	208.0	163.4	165.7	167.8	256.9	244.9	245.9	242.4	222.5	169.3
64	235.1	224.3	217.3	165.8	166.4	168.0	260.2	247.3	248.3	245.6	230.3	169.8
65	238.3	228.1	223.2	175.5	166.8	168.2	262.4	251.4	250.7	248.9	235.3	169.9
66	241.5	230.2	227.1	195.7	167.3	168.5	264.8	255.9	252.1	251.1	240.7	170.1
67	244.5	230.5	230.5	213.3	167.5	168.9	267.7	259.8	252.9	254.0	244.9	170.4
68	247.5	234.1	234.8	223.1	168.4	169.2	270.3	263.1	254.6	257.3	248.7	171.0
69	251.1	239.9	239.7	230.3	169.8	169.5	273.7	265.8	258.8	258.7	252.9	171.2
70	254.1	245.0	244.4	235.1	170.6	169.6	276.2	268.1	264.6	259.2	256.8	171.5
71	257.1	249.2	248.5	238.9	175.2	169.8	279.0	270.7	268.5	262.3	259.5	171.6
72	260.5	252.8	252.2	242.6	211.9	170.0	281.8	273.8	272.0	266.6	261.9	182.6
73	263.5	256.0	255.7	246.7	232.2	170.5	284.9	277.0	274.8	269.9	265.6	231.5
74	266.2	259.0	258.9	251.0	241.3	170.7	288.2	280.3	277.5	273.6	269.6	247.9
75	269.6	262.1	261.9	255.7	246.4	171.1	290.7	283.1	280.5	277.1	272.8	253.9
76	272.5	265.6	264.5	260.0	251.1	171.4	294.1	285.6	283.4	279.4	273.8	259.0
77	275.6	269.1	267.0	263.8	255.3	171.9	298.0	288.8	285.8	283.0	274.8	263.7
78	278.9	272.0	268.8	266.4	259.5	172.1	301.3	292.7	287.4	288.1	279.8	267.8
79	282.3	275.3	270.1	268.9	263.9	172.0	304.0	296.5	292.5	292.5	285.5	272.3
80	285.4	278.6	274.5	270.2	268.5	172.5	307.3	300.3	298.8	294.7	291.0	278.0
81	290.2	282.2	281.1	272.2	271.7	236.5	310.8	303.9	303.7	298.3	295.3	283.0
82	294.1	286.4	286.4	277.1	274.6	259.7	314.3	307.2	307.6	303.6	297.6	287.4
83	297.8	291.4	290.8	282.5	278.2	268.4	317.8	308.6	310.1	308.8	299.3	292.6
84	301.8	296.2	294.8	288.6	283.4	274.1	321.5	311.3	313.9	313.2	304.0	297.6
85	306.1	298.5	298.6	295.0	289.0	278.8	324.8	317.7	317.9	316.4	311.3	302.3
86	309.5	301.3	302.8	300.4	295.2	283.8	324.6	323.9	322.5	320.7	316.9	305.4
87	312.9	309.0	307.4	305.0	301.0	289.0	330.7	328.9	327.0	325.1	321.7	306.9
88	316.7	314.5	312.2	309.4	305.8	295.4	336.9	332.9	330.5	328.1	326.1	315.1
89	322.6	319.6	316.9	314.3	310.3	301.6	341.9	336.6	334.4	330.8	330.6	321.2
90	327.8	324.3	320.8	319.0	315.5	306.9	346.1	340.2	338.8	336.8	335.1	324.1
91	331.4	329.1	321.9	323.2	321.4	312.0	350.4	344.4	343.8	343.0	339.3	332.3
92	333.9	333.7	327.3	327.3	326.2	318.2	354.3	349.7	349.2	348.6	343.6	339.1
93	338.6	338.6	336.3	333.0	330.9	325.3	358.6	355.7	355.0	353.3	348.2	343.6
94	344.8	343.9	342.6	340.0	337.5	333.2	363.2	361.2	360.7	356.9	353.6	348.1
95	350.3	350.1	349.4	347.0	345.4	340.4	368.1	366.0	365.9	362.2	361.1	356.0
96	356.7	357.6	356.7	354.4	353.1	348.1	373.8	371.0	371.4	370.0	367.9	363.8
97	365.5	366.5	365.0	362.4	359.6	355.6	380.9	377.9	378.9	378.3	374.9	371.0
98	375.7	375.7	373.8	371.3	371.1	367.1	390.4	386.6		387.5	384.6	380.3
99												
FBP	386.1	383.0	381.4	378.6	376.5	377.6	399.6	391.7	396.7	398.0	394.5	391.8
Recovered (%)	96.9	97.1	98.0	97.3	97.6	97.6	96.8	97.2	96.9	97.4	97.2	97.2
Residue (%)	1.0	0.9	0.8	0.8	0.8	0.8	1.0	0.9	0.9	0.8	0.8	0.7
Loss (%)	2.1	2.0	1.2	1.9	1.6	1.6	2.2	1.9	2.2	1.8	2.0	2.1
$T_{V/L=20}$ (^{o}F)	120.3	114.1	113.5	114.9	115.4	119.2	134.3	121.8	121.9	124.0	125.2	128.0
RON	86.9	91.9	93.0	94.2	96.1	98.9						
MON	81.3	82.5	83.2	84.4	85.9	87.0						
(R+M)/2	84.1	87.2	88.1	89.3	91.0	93.0						

Refiner BOB	Winter	Winter	Winter	Winter	Winter	Winter	SBOB	Summer	Summer	Summer	Summer	Summer
State	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839043	839399	839400	839401	839402	839403	831491	831999	832000	832001	832002	832003
Date	9/23/08	9/30/08	9/30/08	9/30/08	9/30/08	9/30/08	8/6/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08
Dry Vapor Pressure Equivalent (psi)	11.16	12.82	12.79	12.65	12.41	12.23	6.31	7.48	7.46	7.54	7.49	7.22
Specific Gravity	0.7052	0.7117	0.7184	0.7191	0.7238	0.7357	0.7289	0.7311	0.7324	0.7351	0.7372	0.7438
Ethanol (Vol%)	0.00	10.63	12.69	15.42	20.20	25.82	0.00	9.87	12.66	15.12	19.49	29.32
Ethanol (Wt%)	0.00	11.86	14.02	17.02	22.16	27.86	0.00	10.72	13.72	16.33	20.99	31.29
Distillation, D86 (^{o}F)												
IBP	82.5	87.0	82.9	84.2	85.8	85.7	106.4	107.0	105.2	104.3	107.9	109.3
1	85.6	89.0	86.4	87.7	86.4	89.8	114.0	112.8	110.4	114.9	116.9	115.3
2	88.7	90.9	89.8	91.3	86.9	93.8	121.6	118.6	115.7	122.6	123.6	121.3
3	91.8	92.8	93.3	94.8	88.0	97.9	128.0	124.0	120.9	125.4	126.6	125.4
4	95.2	94.8	96.8	98.4	95.3	102.0	132.7	126.4	124.2	127.6	128.9	128.0
5	101.2	96.9	100.2	101.8	99.9	105.5	136.1	128.0	126.8	129.3	130.6	130.3
6	104.9	100.0	102.8	104.3	103.0	108.0	138.9	129.6	128.7	130.7	132.0	132.2
7	108.5	102.7	105.3	106.5	105.2	110.9	141.3	130.9	130.2	132.0	133.2	133.6
8	111.6	105.0	107.4	108.8	107.5	112.8	143.3	132.0	131.4	133.1	134.3	134.9
9	114.5	106.9	109.4	110.7	110.1	115.1	145.1	132.8	132.5	134.0	135.2	136.0
10	117.0	108.7	111.0	112.6	112.1	117.1	146.6	133.5	133.6	134.8	136.0	136.9
11	119.8	110.8	112.7	114.3	114.3	119.3	148.1	134.2	134.4	135.5	136.7	137.8
12	122.4	112.4	114.4	115.9	116.1	121.1	149.4	135.0	135.3	136.2	137.3	138.5
13	124.5	114.0	116.4	117.5	117.8	123.1	150.7	135.5	135.8	136.7	138.0	139.3
14	126.7	115.7	117.7	119.2	119.9	125.1	152.0	136.2	136.5	137.4	138.6	140.0
15	129.3	117.4	119.4	120.8	121.8	126.8	153.2	136.8	137.2	137.9	139.3	140.7
16	131.7	119.1	121.0	122.4	123.5	128.3	154.3	137.4	138.0	138.4	139.9	141.3
17	134.2	120.8	122.6	124.0	125.4	130.2	155.4	138.0	138.3	139.0	140.5	141.9
18	136.6	122.3	124.1	125.7	127.1	131.8	156.5	138.5	138.9	139.6	141.0	142.5
19	138.9	123.8	125.7	127.4	128.8	133.1	157.6	139.1	139.5	140.2	141.6	143.1
20	141.3	125.5	127.1	128.9	130.2	134.8	158.8	139.7	140.1	140.8	142.2	143.8
21	143.7	127.2	128.7	130.4	131.7	136.5	160.0	140.0	140.7	141.5	142.8	144.4
22	146.3	128.7	130.3	132.0	133.3	138.0	161.2	140.7	141.2	142.0	143.4	144.9
23	148.9	130.2	131.9	133.4	134.9	139.4	162.3	141.2	141.8	142.4	144.0	145.6
24	151.4	131.8	133.2	134.8	136.5	140.6	163.4	141.8	142.3	142.6	144.6	146.1
25	153.7	133.3	134.6	136.3	138.1	142.1	164.7	142.3	143.0	143.2	145.2	146.7
26	156.0	134.6	135.9	137.7	139.5	143.3	166.0	142.8	143.4	143.8	145.9	147.4
27	158.3	136.0	137.4	139.0	140.5	144.6	167.2	143.4	143.8	144.4	146.5	148.0
28	160.8	137.3	139.0	140.2	141.9	145.8	168.2	144.0	144.3	144.9	146.9	148.6
29	163.2	138.7	140.1	141.5	142.8	147.0	169.2	144.4	144.8	145.4	147.5	149.2
30	165.6	140.0	141.3	142.7	144.1	148.0	170.4	145.0	145.3	145.9	148.0	149.7
31	168.1	141.2	142.5	143.8	145.0	149.1	171.7	145.5	145.7	146.5	148.4	150.3
32	170.6	142.4	143.6	144.9	146.3	149.8	173.0	146.1	146.3	147.1	148.7	150.8
33	172.8	143.5	144.6	146.0	147.0	150.8	174.2	146.6	147.0	147.5	149.1	151.4
34	175.1	144.6	145.5	146.9	148.1	151.7	175.5	147.1	147.5	147.9	149.6	151.8
35	177.4	145.7	146.5	147.8	149.2	152.6	176.7	147.4	147.9	148.4	150.3	152.3
36	179.7	146.8	147.6	148.7	149.9	153.2	177.9	147.9	148.3	148.8	150.8	152.8
37	181.7	147.8	148.4	149.5	150.7	153.8	179.1	147.8	148.7	149.4	151.3	153.3
38	183.6	148.7	149.3	150.2	151.4	154.4	180.4	148.3	149.1	150.0	151.8	153.9
39	186.0	149.6	150.0	151.2	152.0	155.0	181.5	148.6	149.3	150.5	152.3	154.3
40	188.0	150.4	150.8	152.0	152.9	155.7	182.8	148.7	149.9	150.8	152.6	154.9
41	189.8	151.3	151.7	152.6	153.5	156.3	184.1	149.2	150.5	151.2	153.0	155.4
42	191.7	152.1	152.3	153.1	154.3	156.8	185.4	150.2	151.0	151.6	153.6	155.8
43	193.5	152.6	153.0	153.8	154.8	157.3	186.7	151.2	151.5	152.2	154.0	156.4
44	195.3	153.2	153.6	154.5	155.3	157.7	188.2	151.2	152.1	152.6	154.4	156.9
45	197.2	153.2	154.2	154.9	156.0	158.2	189.7	152.2	152.2	152.9	154.9	157.2
46	198.9	154.7	154.6	155.5	156.4	158.5	191.0	154.8	152.5	153.1	155.3	157.6
47	200.5	155.5	155.4	156.1	156.9	158.9	192.5	158.8	152.9	153.5	155.8	158.1
48	202.4	156.1	155.9	156.6	157.4	159.3	193.9	163.5	153.4	154.0	156.2	158.5
49	203.8	156.6	156.5	157.0	157.7	159.7	195.3	167.3	153.7	154.5	156.6	158.8
50	205.3	158.1	157.0	157.5	158.1	160.1	196.7	173.1	154.2	155.0	157.1	159.3
51	206.9	159.4	157.6	157.8	158.6	160.4	198.2	179.0	155.4	155.3	157.4	159.8
52	208.2	160.6	158.2	158.2	159.1	160.8	199.8	183.9	156.6	155.7	157.8	160.2
53	209.9	164.6	158.8	158.7	159.2	161.2	201.4	188.6	158.9	156.2	158.3	160.6
54	211.3	169.9	159.6	159.1	159.7	161.3	203.0	192.3	162.2	156.7	158.6	161.0

Refiner BOB	Winter	Winter	Winter	Winter	Winter	Winter	SBOB	Summer	Summer	Summer	Summer	Summer
State	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
Grade	PU	PU	PU	PU	PU	PU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	839043	839399	839400	839401	839402	839403	831491	831999	832000	832001	832002	832003
Date	9/23/08	9/30/08	9/30/08	9/30/08	9/30/08	9/30/08	8/6/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08
Distillation, D86 (^{o}F)												
55	212.7	178.0	160.6	159.5	160.0	161.5	204.6	195.2	166.6	157.4	159.0	161.4
56	214.2	189.0	161.9	160.2	160.6	162.1	206.5	198.2	173.5	158.5	159.5	161.9
57	215.3	197.0	164.1	160.8	160.7	162.2	208.4	200.8	181.9	159.5	159.9	162.3
58	216.7	202.6	168.2	161.3	161.3	162.5	210.3	202.9	188.7	161.8	160.2	162.6
59	218.2	206.2	178.3	161.9	161.9	162.7	212.0	205.1	193.9	167.0	160.6	162.9
60	219.3	208.9	192.9	162.6	162.1	162.9	213.9	207.2	198.8	174.9	161.1	163.2
61	220.6	211.0	201.8	163.8	162.5	163.2	215.8	208.6	202.5	185.1	161.8	163.6
62	221.9	213.1	207.3	165.8	162.7	163.4	217.8	210.9	206.1	194.3	162.3	164.1
63	222.9	215.5	211.0	171.5	163.0	163.6	219.8	213.2	208.9	200.6	163.0	164.5
64	224.2	216.9	213.4	185.8	163.3	163.7	221.8	214.6	211.7	206.0	163.9	164.8
65	225.5	217.3	215.7	202.7	163.7	164.0	223.9	216.0	214.8	210.3	164.9	165.2
66	226.9	219.4	217.7	211.0	163.9	164.2	226.1	219.1	217.1	213.8	165.7	165.6
67	228.0	222.4	219.0	214.9	164.6	164.5	228.3	222.0	219.0	217.2	167.0	166.0
68	229.6	222.2	221.4	217.5	165.2	164.8	230.7	224.2	221.2	220.4	169.6	166.3
69	230.8	224.5	223.7	219.3	166.2	165.0	232.9	227.1	223.8	223.2	176.2	166.7
70	232.1	226.7	225.2	220.5	167.3	165.3	235.2	230.3	226.0	225.7	193.0	166.8
71	233.2	229.0	224.9	222.3	173.5	165.3	237.8	232.7	228.5	228.3	211.7	167.1
72	235.0	230.4	225.5	224.6	204.8	165.7	240.3	234.2	231.1	230.5	220.1	167.6
73	237.0	228.1	227.9	227.2	219.9	165.8	242.8	236.3	232.2	232.8	225.3	167.9
74	238.6	227.0	230.7	229.5	224.5	166.0	245.4	239.9	234.7	235.6	229.5	168.3
75	240.0	231.1	228.6	231.6	227.1	166.5	248.1	243.0	238.3	238.9	233.4	168.6
76	241.8	234.3	232.0	233.5	228.8	166.8	250.9	245.5	242.2	241.7	236.9	169.1
77	243.9	237.4	232.6	234.7	230.4	167.1	253.8	247.3	244.8	242.3	240.6	169.4
78	245.9	240.1	232.0	234.9	232.3	167.3	256.7	250.3	248.0	243.1	244.0	169.9
79	248.2	242.8	232.9	236.2	234.7	171.4	259.8	253.9	251.7	248.5	247.6	169.8
80	250.7	245.4	238.0	239.2	236.8	223.4	263.4	257.4	254.8	254.1	251.3	170.0
81	253.2	247.6	242.4	240.8	239.8	230.7	267.2	259.7	258.2	258.7	254.1	172.5
82	255.7	249.8	246.8	243.0	242.1	233.3	271.0	254.1	262.0	262.7	256.7	212.2
83	258.9	252.0	250.3	247.0	245.5	236.1	275.2	262.7	266.2	266.3	259.9	242.6
84	262.1	254.1	248.3	251.0	249.0	239.8	279.0	270.9	270.3	267.1	264.1	249.4
85	265.9	257.0	245.9	255.3	244.2	244.4	282.8	276.7	274.5	267.5	269.6	255.5
86	270.2	260.7	253.6	259.3	250.9	249.0	287.4	282.0	278.4	274.4	275.5	261.3
87	275.5	265.4	261.8	263.3	257.6	253.2	292.3	287.0	283.8	282.7	281.4	267.8
88	281.4	270.6	269.3	267.9	263.4	258.0	297.7	292.3	289.1	289.5	286.7	274.6
89	288.3	276.4	275.2	273.6	262.4	263.2	303.2	297.2	294.8	295.3	291.7	281.2
90	296.2	283.5	281.0	280.7	269.6	270.0	309.5	303.8	300.4	300.4	296.3	288.0
91	305.7	291.7	289.7	289.7	283.1	277.7	315.8	309.9	306.9	307.0	302.3	295.0
92	316.0	302.2	299.7	300.3	295.2	286.7	318.6	314.7	314.3	315.1	311.2	303.0
93	325.3	314.2	311.7	312.3	306.1	299.2	325.1	322.9	321.0	322.5	319.5	311.0
94	331.3	324.5	323.6	324.5	319.4	314.2	334.1	330.6	327.6	330.5	327.0	319.4
95	338.9	333.4	333.4	334.0	329.1	325.8	342.6	339.5	334.9	337.4	333.6	328.2
96	350.0	341.3	339.7	341.6	338.8	337.0	351.3	348.6	345.7	346.6	342.2	337.6
97	359.3	350.0	348.9	351.0	348.9	346.8	361.0	360.6	356.4	361.7	356.1	349.4
98	374.0	362.8	364.0	367.0	362.9	360.3	377.0	375.4	371.8	377.9	372.0	368.5
99			373.3						384.8			
FBP	390.5	383.9	376.5	380.0	376.5	375.1	393.4	388.4	388.8	389.6	385.3	382.5
Recovered (%)	97.0	96.4	96.8	97.2	98.2	97.6	98.1	97.6	97.5	98.4	98.5	98.0
Residue (%)	0.6	0.5	0.8	0.7	0.9	0.8	0.8	0.8	0.7	1.0	0.9	0.8
Loss (%)	2.4	3.1	2.4	2.1	0.9	1.6	1.1	1.6	1.8	0.6	0.6	1.2
$T_{V/L=20}$ (^{o}F)	126.9	112.6	113.4	114.2	115.4	116.1	159.0	137.8	137.7	137.5	138.3	139.2
RON	93.9	98.6	99.4	100.4	101.7	102.2	84.0	90.9	91.9	93.0	95.9	99.9
MON	88.1	90.2	90.3	90.8	91.0	91.3	80.3	83.8	84.4	86.9	87.7	89.0
(R+M)/2	91.0	94.4	94.9	95.6	96.4	96.8	82.2	87.4	88.2	90.0	91.8	94.5

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ
Grade	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	836082	836230	836231	836232	836233	836234	836083	836225	836226	836227	836228	836229
Date	9/10/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08	9/10/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08
Dry Vapor Pressure Equivalent (psi)	5.69	7.22	7.21	7.21	7.14	7.03	4.76	7.20	7.31	7.21	7.04	6.98
Specific Gravity	0.7416	0.7433	0.7447	0.7458	0.7484	0.7538	0.7551	0.7513	0.7516	0.7521	0.7553	0.7591
Ethanol (Vol%)	0.00	9.91	12.29	14.91	20.17	28.74	0.00	9.95	12.68	14.87	20.25	28.80
Ethanol (Wt%)	0.00	10.58	13.11	15.87	21.40	30.27	0.00	10.51	13.40	15.69	21.29	30.12
Distillation, D86 (^{o}F)												
IBP	105.0	109.2	105.8	108.6	106.9	109.8	110.0	105.4	104.3	104.5	105.1	106.7
1	110.7	112.7	111.2	114.2	113.7	120.5	117.4	111.4	111.2	110.4	113.3	118.0
2	116.5	116.1	116.5	119.9	120.6	127.9	124.9	117.4	117.6	116.2	121.5	125.4
3	122.2	119.5	121.6	124.5	126.3	131.1	132.7	123.4	122.5	122.1	125.7	129.3
4	128.2	123.0	125.3	127.8	129.3	133.6	140.6	126.3	125.9	126.5	128.5	132.1
5	134.0	126.5	127.9	130.4	131.5	135.5	145.7	128.5	128.2	129.1	131.0	134.4
6	138.8	128.8	130.3	132.3	133.3	137.0	149.9	130.5	130.6	131.3	132.7	136.4
7	142.7	130.8	132.2	133.7	135.0	138.5	153.9	132.3	132.3	132.8	134.3	138.1
8	145.7	132.4	133.8	135.1	136.4	139.9	157.0	133.5	133.9	134.2	136.0	139.4
9	148.4	133.8	135.2	136.3	137.8	141.0	160.1	134.7	135.3	135.6	137.0	140.6
10	150.9	135.2	136.6	137.4	138.9	141.8	162.7	135.9	136.6	136.9	138.1	141.7
11	153.1	136.4	137.5	138.3	139.7	142.7	165.2	137.0	137.6	138.1	139.3	142.8
12	155.3	137.5	138.5	139.2	140.7	143.6	167.5	138.0	138.6	139.2	140.2	143.9
13	157.4	138.4	139.4	140.2	141.9	144.6	169.5	138.9	139.4	140.1	141.3	144.8
14	159.4	139.3	140.2	141.0	142.7	145.6	171.5	139.8	140.5	141.0	142.1	145.7
15	161.3	140.0	141.0	141.9	143.5	146.5	173.4	140.5	141.3	141.6	143.3	146.7
16	163.0	140.8	141.8	142.7	144.4	147.4	175.3	141.6	142.2	142.4	144.2	147.6
17	164.9	141.8	142.7	143.6	145.3	148.3	176.9	142.5	143.1	143.4	145.2	148.4
18	166.8	142.5	143.5	144.5	146.0	149.0	178.9	143.3	144.0	144.2	146.0	149.2
19	168.6	143.1	144.4	145.3	146.8	149.7	180.7	144.3	144.8	145.1	147.0	150.0
20	170.5	143.9	145.1	146.2	147.4	150.5	182.4	145.2	145.6	145.9	147.6	150.8
21	172.2	144.6	145.9	146.9	148.2	151.3	184.3	146.0	146.5	146.8	148.4	151.6
22	174.2	145.2	146.7	147.6	148.8	152.0	186.5	147.0	147.3	147.6	149.1	152.4
23	176.3	145.8	147.5	148.3	149.6	152.7	188.5	147.7	148.2	148.4	149.9	153.0
24	178.3	146.4	148.3	149.1	150.4	153.4	190.3	148.2	148.9	149.2	150.7	153.7
25	180.1	147.1	149.0	149.8	151.0	154.0	192.1	149.0	149.5	149.9	151.4	154.4
26	181.9	148.2	149.8	150.6	151.6	154.6	193.9	150.1	150.2	150.5	152.1	155.1
27	183.9	148.8	150.5	151.2	152.1	155.2	195.6	150.8	151.0	151.1	152.8	155.7
28	185.8	149.2	151.3	151.9	152.8	155.8	197.3	151.0	151.8	151.8	153.4	156.5
29	187.7	149.8	151.9	152.5	153.5	156.3	199.2	151.8	152.5	152.6	154.0	157.1
30	189.6	150.7	152.4	153.0	153.9	156.8	201.0	152.4	153.2	153.4	154.6	157.5
31	191.4	151.7	152.7	153.6	154.5	157.4	202.8	152.7	153.8	154.0	155.1	158.0
32	193.4	152.1	153.4	154.4	155.2	158.0	204.7	153.7	154.3	154.6	155.8	158.5
33	195.4	152.4	153.8	155.0	155.9	158.6	206.3	154.4	154.9	155.1	156.4	159.1
34	197.3	153.0	154.5	155.5	156.4	159.2	207.9	155.0	155.5	155.8	157.0	159.6
35	199.0	153.4	155.1	156.1	156.9	159.6	209.6	155.7	156.1	156.5	157.5	160.2
36	200.6	154.0	155.7	156.7	157.4	160.0	211.5	155.5	156.7	157.1	158.1	160.7
37	202.4	154.7	155.7	157.1	157.8	160.4	213.3	155.9	157.3	157.5	158.5	161.1
38	204.3	155.9	156.5	157.6	158.3	160.8	214.8	156.9	157.8	158.0	159.0	161.4
39	206.0	156.1	157.3	158.0	158.9	161.2	216.3	158.8	158.1	158.5	159.4	161.8
40	207.9	158.8	157.8	158.6	159.1	161.5	217.9	163.2	158.5	159.0	160.1	162.2
41	209.7	164.2	158.3	159.3	159.4	161.8	219.1	167.5	159.1	159.5	160.5	162.5
42	211.4	169.1	159.0	159.7	160.0	162.1	220.5	173.9	160.2	160.0	160.7	162.8
43	213.1	175.7	159.4	159.8	160.4	162.4	221.8	181.2	161.3	160.4	161.3	163.2
44	214.8	183.0	159.1	160.3	160.7	162.9	222.9	188.8	162.5	160.6	161.6	163.5
45	216.4	189.4	161.7	161.0	161.1	163.4	224.4	196.0	165.5	161.1	162.2	163.8
46	218.1	195.1	165.7	161.5	161.5	163.7	225.7	201.9	170.2	161.7	162.3	164.1
47	219.6	199.6	171.5	162.0	161.8	164.0	226.7	207.2	177.2	162.0	162.9	164.5
48	221.3	204.1	181.1	162.9	162.0	164.3	228.4	210.9	186.1	162.6	163.1	164.7
49	222.8	207.4	191.0	164.7	162.5	164.5	229.8	214.4	196.0	164.0	163.4	165.0
50	224.3	210.4	199.2	167.2	162.8	164.7	230.6	217.1	203.8	167.4	163.7	165.3
51	225.9	213.1	206.1	172.0	163.1	165.0	231.5	219.4	209.7	172.7	164.4	165.5
52	227.3	216.7	211.1	181.6	163.5	165.2	233.2	221.7	214.2	180.5	164.3	165.7
53	229.0	218.6	215.4	193.9	163.7	165.4	234.3	223.1	217.5	192.3	164.7	166.0
54	230.4	220.4	218.5	204.0	163.8	165.8	235.1	224.6	220.6	203.5	164.9	166.3

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ	NJ
Grade	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	836082	836230	836231	836232	836233	836234	836083	836225	836226	836227	836228	836229
Date	9/10/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08	9/10/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08
Distillation, D86 (^{o}F)												
55	231.7	223.0	220.5	211.1	164.3	166.1	236.5	227.0	223.1	211.0	165.3	166.6
56	233.0	224.8	223.1	216.2	164.9	166.3	237.9	228.4	225.5	216.5	166.5	166.8
57	234.6	226.9	225.1	220.2	165.0	166.4	238.7	229.8	227.7	220.4	166.6	167.0
58	236.7	227.7	226.2	223.4	165.6	166.6	239.4	230.7	229.7	223.6	170.2	167.2
59	238.3	229.4	228.9	226.2	168.5	166.9	240.6	230.3	231.0	226.6	174.7	167.4
60	239.6	231.5	231.9	228.8	177.8	167.1	242.3	232.0	232.7	229.3	183.4	167.6
61	241.0	232.8	233.8	230.9	196.9	167.3	243.7	235.2	234.3	231.3	200.5	167.9
62	242.5	234.6	234.9	232.5	214.2	167.4	245.0	237.4	235.5	233.4	217.1	168.1
63	244.3	237.1	236.4	234.5	222.3	167.4	246.2	239.2	236.5	235.5	225.0	168.2
64	245.8	237.8	238.6	236.8	226.9	167.6	247.2	240.3	237.2	236.9	228.1	168.4
65	247.4	237.7	240.2	239.0	230.8	168.2	248.7	241.8	238.0	237.9	231.2	168.8
66	249.5	240.2	239.5	240.6	234.2	168.9	250.5	243.4	240.4	239.2	233.6	169.2
67	251.4	242.4	237.5	241.3	237.4	169.5	252.0	244.9	242.7	240.8	235.7	169.4
68	253.0	242.8	241.5	241.5	240.5	170.2	253.3	244.7	244.3	241.5	237.7	169.5
69	254.7	241.2	245.7	242.1	243.0	170.9	254.9	239.1	244.3	241.6	239.9	170.0
70	256.7	245.1	249.3	244.2	245.3	170.9	256.9	242.8	245.0	242.9	242.1	170.5
71	258.6	249.4	252.0	247.5	246.7	171.0	258.8	247.6	247.1	245.8	244.1	171.5
72	260.6	253.2	254.1	251.0	247.5	184.7	260.7	251.5	249.6	247.7	246.2	172.8
73	262.7	256.6	254.7	253.9	249.4	216.4	262.6	254.3	252.4	249.1	247.1	183.2
74	264.7	259.1	253.9	256.3	251.9	238.1	264.4	256.3	254.9	251.3	248.5	216.0
75	266.9	261.2	256.9	258.5	253.8	243.1	266.7	258.5	257.1	253.7	249.1	236.6
76	269.2	263.3	261.3	260.3	255.1	246.9	269.0	260.2	259.1	255.1	251.3	240.7
77	271.6	265.8	264.5	261.6	257.0	250.9	271.3	262.0	260.8	256.0	253.2	244.2
78	274.1	268.3	267.5	263.5	259.6	254.6	274.2	263.7	261.9	257.9	255.8	248.0
79	277.0	269.9	270.6	266.0	261.1	257.7	277.2	265.6	263.9	261.1	259.5	251.7
80	280.1	272.3	273.4	269.4	264.8	260.9	280.2	268.5	267.2	264.8	262.5	255.3
81	283.1	275.4	275.7	273.8	269.1	264.0	283.3	270.9	270.7	268.6	265.4	258.6
82	286.6	278.8	278.9	277.9	273.8	266.4	286.3	273.9	274.2	272.3	267.1	261.7
83	290.2	282.0	282.4	281.5	278.3	269.2	289.8	277.1	277.6	275.5	270.4	265.0
84	293.8	285.7	285.7	285.3	282.1	273.0	293.4	280.6	281.1	278.5	274.8	269.0
85	297.5	289.0	289.9	288.7	285.5	276.4	296.9	284.8	285.0	281.4	280.2	272.5
86	301.6	293.5	293.6	292.5	288.7	280.4	300.9	289.1	289.1	284.9	284.8	276.0
87	305.5	298.4	298.1	297.5	293.1	285.7	305.3	292.9	293.3	289.2	288.7	280.3
88	310.1	303.5	302.7	302.4	298.9	290.5	309.4	297.8	298.0	294.5	293.2	284.9
89	315.1	309.5	308.4	307.1	304.6	295.7	314.1	303.3	303.2	300.1	297.7	290.0
90	320.3	314.4	314.5	312.4	310.1	302.1	317.9	308.2	308.7	305.9	304.4	295.7
91	325.6	319.4	319.8	318.6	315.1	309.1	321.2	314.5	314.5	312.0	309.8	301.9
92	330.8	326.2	326.0	324.2	319.3	316.5	328.6	320.4	319.7	318.2	316.4	308.7
93	336.6	332.3	333.5	330.3	326.6	324.0	335.8	327.5	325.8	324.8	323.0	315.8
94	345.1	339.3	341.0	337.5	335.4	332.3	342.1	333.1	332.6	331.4	329.5	323.2
95	354.5	348.3	348.5	346.6	345.4	342.1	349.4	339.5	341.8	338.6	334.8	331.6
96	364.8	358.8	357.4	358.2	356.0	354.3	358.4	349.8	352.2	348.5	345.7	342.0
97	376.3	369.6	372.7	371.7	368.3	368.4	372.5	363.0	365.8	361.9	359.7	354.3
98	391.4	383.2	388.5	387.7	384.3	385.3	391.8	380.5	378.3	377.7	374.8	372.0
99		395.9						393.9				
FBP	406.4	400.7	401.1	403.4	399.3	394.9	406.6	397.3	395.8	391.0	388.3	391.3
Recovered (%)	97.1	96.8	97.7	98.0	97.8	98.6	97.8	97.5	97.9	97.9	98.2	98.7
Residue (%)	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.8	1.0	0.8	0.9	0.9
Loss (%)	2.2	2.5	1.5	1.2	1.4	0.5	1.4	1.7	1.2	1.3	0.9	0.4
$T_{V/L=20}$ (^{o}F)	169.3	141.7	141.4	141.6	141.5	142.3		141.9	141.7	141.6	141.7	142.4
RON												
MON												
(R+M)/2												

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	836035	839379	839380	839381	839382	839383	836036	839384	839385	839386	839387	839388
Date	9/3/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08	9/3/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08
Dry Vapor Pressure Equivalent (psi)	5.79	6.96	7.04	7.05	7.13	6.79	5.79	7.00	7.08	7.06	7.13	6.97
Specific Gravity	0.7453	0.7494	0.7511	0.7515	0.7544	0.7588	0.7482	0.7540	0.7532	0.7532	0.7552	0.7599
Ethanol (Vol%)	0.00	9.90	12.88	15.05	20.26	31.10	0.00	14.04	12.78	13.93	19.81	29.21
Ethanol (Wt%)	0.00	10.49	13.61	15.90	21.32	32.54	0.00	14.78	13.47	14.68	20.82	30.52
Distillation, D86 (^{o}F)												
IBP	106.8	107.3	109.3	107.6	110.0	109.9	109.1	109.7	107.9	106.1	107.0	111.2
1	113.9	114.2	114.1	114.6	121.3	114.4	116.4	113.9	112.8	113.5	114.1	115.9
2	120.9	121.1	119.0	121.6	126.7	119.0	123.7	118.1	117.6	120.5	121.1	120.7
3	130.2	124.8	123.5	126.7	129.3	123.7	131.0	122.4	121.9	124.2	125.0	124.8
4	135.3	127.0	126.9	128.9	131.3	127.9	135.7	125.6	125.2	126.5	127.7	127.7
5	139.1	129.1	129.2	130.7	133.0	130.6	138.6	127.8	127.6	128.1	129.9	129.7
6	142.1	130.7	131.0	132.1	134.2	132.5	141.2	129.7	129.3	129.7	131.4	131.5
7	144.6	132.1	132.3	133.4	135.3	133.9	143.4	131.2	130.5	130.7	132.7	133.0
8	147.0	132.9	133.4	134.4	136.4	135.3	145.1	132.4	131.6	131.5	133.9	134.1
9	148.7	133.8	134.5	135.4	137.3	136.6	146.6	133.5	132.8	132.5	135.0	135.1
10	150.6	134.5	135.4	136.3	138.1	137.7	148.2	134.3	133.6	133.2	135.7	135.7
11	152.2	135.2	136.3	137.0	138.9	138.6	150.0	135.0	134.3	133.7	136.4	136.3
12	153.7	136.1	137.0	137.7	139.5	139.4	151.4	135.7	134.9	134.4	137.0	137.2
13	155.2	136.7	137.7	138.4	140.2	140.2	152.6	136.4	135.6	135.0	137.9	137.9
14	156.5	137.4	138.5	139.1	140.7	141.2	153.8	137.0	136.2	135.7	138.7	138.5
15	157.9	137.8	139.1	139.8	141.6	142.0	155.0	137.8	136.7	136.6	139.3	139.1
16	159.6	138.7	139.7	140.5	142.3	142.7	156.1	138.4	137.3	137.6	139.9	140.1
17	161.2	139.6	140.4	141.2	142.9	143.5	157.4	138.9	138.1	138.3	140.6	141.3
18	162.6	140.2	141.1	141.9	143.7	144.4	158.8	139.6	138.8	139.1	141.3	142.2
19	164.0	140.9	141.7	142.7	144.5	145.3	160.0	140.1	139.4	140.0	141.9	143.0
20	165.4	141.6	142.6	143.5	145.2	146.1	161.5	140.7	140.0	140.9	142.6	143.6
21	166.8	142.3	143.4	144.2	145.7	146.8	162.8	141.5	140.7	141.4	143.3	144.4
22	168.2	143.0	144.0	144.8	146.6	147.5	164.2	142.1	141.5	142.0	143.9	145.5
23	169.9	143.6	144.7	145.4	147.3	148.3	165.5	142.5	142.2	142.8	144.7	146.4
24	171.4	144.2	145.6	146.0	147.9	149.0	166.9	143.0	142.7	143.6	145.3	147.2
25	172.8	144.7	146.3	146.6	148.6	149.7	168.3	143.6	143.3	144.2	146.1	148.0
26	174.2	145.3	147.0	147.2	149.3	150.4	169.5	144.2	144.1	144.6	146.8	148.8
27	175.9	146.0	147.6	147.8	149.9	151.0	171.1	144.8	144.6	145.2	147.6	149.7
28	177.5	146.7	148.2	148.3	150.5	151.7	172.6	145.4	145.2	145.8	148.2	150.5
29	179.2	147.5	148.8	148.9	151.3	152.4	173.9	146.3	146.0	146.5	148.9	151.0
30	180.8	147.9	149.2	149.6	151.8	153.1	175.5	146.9	146.7	147.3	149.6	151.7
31	182.5	148.6	150.0	150.3	152.3	153.6	177.2	147.4	147.4	148.1	150.2	152.4
32	184.0	149.1	150.7	151.0	152.9	154.2	178.8	148.2	147.9	148.7	150.8	152.9
33	185.4	149.8	151.1	151.5	153.4	154.9	180.5	148.9	148.5	149.4	151.5	153.7
34	187.2	150.2	151.7	152.0	153.9	155.5	182.1	149.6	149.1	149.9	152.4	154.4
35	188.7	150.6	152.1	152.5	154.5	156.1	183.8	150.2	149.7	150.5	152.8	155.0
36	190.3	151.7	152.6	152.9	155.1	156.7	185.5	150.9	150.3	151.3	153.3	155.6
37	191.8	152.3	153.2	153.6	155.5	157.2	187.3	151.6	150.9	151.8	154.0	156.4
38	193.4	152.5	153.6	154.1	156.0	157.6	189.7	152.1	151.6	152.5	154.6	157.1
39	195.4	152.7	153.8	154.5	156.6	158.1	191.9	152.7	152.2	153.1	155.1	157.7
40	196.8	153.5	154.3	155.0	157.1	158.5	193.9	153.2	152.7	153.7	155.7	158.3
41	198.3	155.0	155.2	155.5	157.4	159.0	196.0	153.8	153.3	154.2	156.4	158.9
42	199.8	156.4	155.8	156.1	157.9	159.5	198.4	154.2	153.8	155.0	157.0	159.6
43	201.7	158.7	156.2	156.5	158.4	159.9	200.6	154.6	154.4	155.5	157.4	160.2
44	203.2	162.1	156.4	156.9	158.7	160.3	202.6	155.2	155.0	156.3	157.9	160.7
45	204.5	168.4	157.0	157.4	159.1	160.7	204.6	155.9	155.5	156.8	158.5	161.3
46	206.2	174.6	157.7	157.6	159.5	161.1	206.8	156.4	155.9	157.2	159.1	161.8
47	207.9	181.0	157.7	158.0	159.9	161.4	209.2	156.8	156.5	157.6	159.2	162.2
48	209.5	187.1	158.0	158.6	160.3	161.8	211.5	157.3	157.6	158.2	160.1	162.7
49	211.2	192.1	161.0	158.9	160.6	162.1	213.8	157.7	158.8	158.7	160.6	163.2
50	213.0	196.7	165.3	159.4	161.1	162.5	216.3	158.2	159.1	159.4	161.1	163.7
51	214.4	200.5	170.9	159.7	161.5	162.9	218.6	158.9	160.9	159.7	161.5	164.2
52	215.7	204.0	178.0	159.7	161.7	163.2	220.8	159.6	165.7	160.5	162.2	164.7
53	217.3	207.0	186.8	161.0	162.2	163.5	223.3	160.0	172.5	161.4	162.4	165.1
54	218.8	209.8	195.5	163.8	162.6	163.9	225.8	163.4	180.8	161.7	162.8	165.5

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
Grade	RU	RU	RU	RU	RU	RU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	836035	839379	839380	839381	839382	839383	836036	839384	839385	839386	839387	839388
Date	9/3/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08	9/3/08	10/7/08	10/7/08	10/7/08	10/7/08	10/7/08
Distillation, D86 (^{o}F)												
55	220.5	212.1	201.7	169.4	162.7	164.5	228.5	169.5	190.2	163.7	163.5	166.0
56	222.0	214.0	206.6	177.8	163.3	164.9	231.3	176.7	198.9	165.1	164.1	166.5
57	223.5	215.9	210.6	188.1	163.9	165.3	234.0	186.6	206.6	171.8	164.5	167.0
58	225.3	218.1	213.8	197.8	164.2	165.7	236.9	198.2	213.3	183.0	165.2	167.3
59	227.0	220.1	216.7	204.8	164.4	165.8	239.5	208.4	219.0	196.1	165.7	167.6
60	228.5	221.7	219.0	209.7	164.8	165.7	242.2	215.6	223.9	208.4	166.3	168.0
61	230.6	223.2	221.0	213.9	165.6	165.9	245.1	221.6	228.0	217.8	166.6	168.4
62	232.2	225.0	223.3	218.6	167.2	166.3	247.5	226.6	232.0	225.4	167.0	168.7
63	233.8	226.5	225.6	222.4	170.3	166.6	249.7	230.7	235.8	230.9	167.9	169.0
64	235.9	228.2	227.6	225.7	177.2	166.9	252.5	234.5	238.9	235.1	172.3	169.4
65	237.9	230.6	229.6	228.3	193.4	167.2	255.3	238.5	242.0	239.1	184.9	169.8
66	239.4	233.1	231.0	230.6	209.3	167.4	257.8	242.4	245.1	242.8	211.2	170.1
67	241.1	235.1	232.4	232.3	218.9	167.5	260.4	245.1	248.3	245.6	227.8	170.4
68	243.5	236.8	234.7	234.1	225.3	167.9	262.9	247.8	251.4	248.3	236.0	170.7
69	245.5	239.1	237.1	236.2	229.7	168.3	265.6	251.7	254.1	251.7	242.8	171.1
70	247.9	241.0	239.2	238.8	232.7	168.7	268.1	255.1	256.7	254.7	247.6	171.5
71	250.6	243.1	241.2	241.0	235.5	169.1	270.4	257.1	258.1	257.8	250.8	172.0
72	253.1	246.0	243.4	243.0	238.4	169.3	272.8	259.1	258.9	261.1	254.4	172.5
73	255.5	249.2	245.8	244.7	240.9	169.5	275.3	262.1	261.9	263.0	258.5	173.2
74	258.2	252.1	249.2	246.0	244.3	170.0	277.8	265.5	266.4	265.2	262.2	173.7
75	261.4	254.8	252.8	247.8	247.8	170.4	280.3	268.9	270.4	268.7	265.2	174.4
76	264.8	257.5	256.0	250.8	250.7	170.8	282.5	272.0	273.8	271.8	268.2	209.2
77	267.8	260.5	259.1	254.5	253.6	171.1	284.9	274.5	276.5	274.5	270.9	248.7
78	271.4	263.4	262.1	258.5	256.8	194.1	287.5	276.7	278.9	277.5	273.5	256.8
79	274.7	266.6	265.5	262.8	260.1	228.2	290.1	279.7	281.4	280.1	276.4	262.2
80	278.2	270.0	267.6	267.3	263.2	242.3	292.7	283.2	284.4	282.8	279.9	267.3
81	281.3	273.2	268.2	271.6	267.3	249.0	295.1	286.5	287.6	286.1	283.2	272.2
82	284.6	276.8	271.7	275.6	271.1	255.8	297.7	289.5	290.8	289.1	285.9	276.5
83	288.0	280.5	279.4	279.6	274.3	261.7	300.4	292.1	293.4	292.4	288.6	280.2
84	291.5	284.4	285.1	283.5	277.8	266.2	302.9	295.1	296.2	295.8	292.2	283.2
85	294.9	288.5	289.8	287.4	283.0	270.6	305.5	298.2	299.2	298.8	294.9	285.9
86	298.6	292.5	293.7	291.6	288.5	276.1	307.7	301.5	302.1	301.4	298.4	289.5
87	302.1	296.9	297.2	295.8	293.4	282.0	310.3	304.7	305.0	304.3	301.6	293.8
88	305.7	301.6	301.3	300.2	297.7	287.5	313.3	307.6	308.2	307.5	304.8	298.2
89	309.1	305.8	305.1	304.4	301.3	291.3	316.0	310.7	311.2	310.0	308.4	302.2
90	311.0	309.6	309.2	308.5	305.8	296.1	318.9	313.6	313.2	311.7	310.9	304.3
91	315.6	312.5	313.5	313.2	310.9	302.5	322.0	316.4	316.4	316.4	314.1	307.6
92	320.3	318.1	317.7	317.7	315.7	308.3	325.3	320.5	321.2	320.7	317.6	312.9
93	325.3	324.2	322.0	322.3	320.3	314.3	328.8	325.1	325.9	324.9	321.8	316.7
94	330.3	329.5	327.1	327.4	324.6	319.8	333.0	329.3	330.4	329.8	327.4	321.2
95	335.8	335.3	334.3	333.2	331.9	324.6	338.3	334.3	335.7	334.6	333.1	327.1
96	342.9	342.0	342.6	339.8	340.4	330.7	344.3	338.9	341.3	340.4	339.2	333.1
97	351.8	351.2	353.3	350.1	351.0	341.2	351.2	346.5	348.9	347.6	345.9	340.9
98	365.1	369.2	366.9	368.2	365.2	355.9	362.0	359.6	360.7	360.8	356.1	353.2
99	389.5											
FBP	389.5	380.9	378.6	382.7	379.7	369.8	374.6	373.4	372.9	374.7	371.2	369.9
Recovered (%)	98.5	98.1	97.7	97.8	98.8	97.9	97.4	97.3	98.0	98.3	98.2	98.0
Residue (%)	0.6	0.9	0.9	0.8	0.9	0.8	0.7	0.7	0.8	0.9	0.9	0.7
Loss (%)	0.9	1.0	1.4	1.4	0.3	1.3	1.9	2.0	1.2	0.8	0.9	1.3
$T_{V/L=20}$ (^{o}F)	166.3	140.6	139.8	139.8	140.0	141.4	165.0	139.7	139.9	139.6	139.8	141.0
RON	89.0	94.4	95.2	96.6	98.5	100.9						
MON	83.0	85.5	87.2	87.4	88.5	89.5						
(R+M)/2	86.0	90.0	91.2	92.0	93.5	95.2						

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	TX	TX	TX	TX	TX	TX	IL	IL	IL	IL	IL	IL
Grade	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	836037	839389	839390	839391	839392	839393	838796	839394	839395	839396	839397	839398
Date	9/4/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/23/08	9/30/08	9/30/08	9/30/08	9/30/08	9/30/08
Dry Vapor Pressure Equivalent (psi)	6.96	8.56	8.46	8.44	8.43	8.19	5.69	7.74	7.63	7.62	7.48	7.39
Specific Gravity	0.7546	0.7569	0.7586	0.7570	0.7578	0.7624	0.7366	0.7392	0.7407	0.7407	0.7449	0.7506
Ethanol (Vol%)	0.00	10.11	12.92	15.38	20.69	31.24	0.00	10.38	12.88	15.50	21.03	25.31
Ethanol (Wt%)	0.00	10.61	13.52	16.13	21.68	32.53	0.00	11.15	13.81	16.62	22.41	26.77
Distillation, D86 (^{o}F)												
IBP	100.8	98.9	100.1	100.7	101.3	103.8	108.4	103.3	103.2	103.4	103.8	103.6
1	106.8	103.7	104.8	104.6	106.0	108.4	111.1	108.5	107.3	107.8	109.3	109.3
2	112.8	108.5	109.5	108.5	110.7	113.1	116.5	113.6	111.4	112.3	114.8	115.0
3	118.8	113.3	114.3	112.3	115.4	117.6	130.0	118.8	115.6	116.7	120.3	120.4
4	124.7	116.9	118.2	116.2	119.6	121.5	135.3	122.2	120.1	120.3	124.0	123.8
5	129.0	119.9	121.0	119.7	122.3	124.2	139.4	124.3	123.9	122.7	126.0	126.4
6	132.3	122.1	123.0	122.4	124.5	126.7	142.5	126.4	126.1	124.8	127.7	128.5
7	135.1	124.2	125.0	124.2	126.6	129.1	145.1	127.8	127.6	126.7	129.2	130.2
8	138.0	125.9	126.8	126.5	128.4	131.1	147.3	129.3	129.0	128.1	130.6	131.3
9	140.5	127.4	128.3	128.1	130.1	132.9	149.1	130.3	130.2	129.4	131.7	132.7
10	142.6	128.8	129.6	129.6	131.5	134.5	150.7	131.6	131.3	130.5	132.8	133.8
11	144.5	130.1	130.9	131.3	132.9	135.6	152.2	132.5	132.3	131.4	133.8	135.0
12	146.6	131.1	132.1	132.7	134.0	137.0	153.6	133.1	133.1	132.3	134.6	136.0
13	148.3	132.3	133.2	133.6	135.3	138.3	155.1	133.9	133.8	132.9	135.4	136.7
14	150.2	133.1	134.2	134.6	136.5	139.5	156.6	134.5	134.6	133.8	136.4	137.5
15	152.0	134.0	135.2	135.5	137.5	140.4	157.8	135.3	135.2	134.7	137.3	138.4
16	153.5	135.1	136.2	136.8	138.5	141.3	158.8	135.9	135.7	135.4	138.1	139.4
17	155.3	136.0	136.8	137.8	139.5	142.4	160.2	136.7	136.4	136.2	138.5	140.3
18	156.9	137.0	137.6	138.8	140.4	143.2	161.6	137.3	137.1	136.9	139.1	141.1
19	158.6	137.9	138.4	139.4	141.1	144.1	163.1	138.0	137.9	137.7	139.9	142.0
20	160.1	138.6	139.4	140.2	141.8	145.0	164.5	138.5	138.6	138.5	140.7	142.9
21	161.5	139.2	140.4	141.1	143.0	145.8	165.9	139.1	139.2	139.4	141.3	143.6
22	163.0	139.8	141.1	141.7	143.8	146.8	167.3	139.9	139.9	140.0	142.0	144.3
23	164.6	140.6	142.0	142.3	144.6	147.5	168.7	140.5	140.6	140.9	142.6	145.0
24	165.9	141.3	142.7	142.9	145.4	148.2	170.0	141.0	141.4	141.5	143.0	145.8
25	167.6	142.3	143.0	143.5	146.1	148.9	171.3	141.7	142.0	142.4	143.7	146.4
26	169.1	142.6	143.6	144.2	146.9	149.6	172.7	142.4	142.6	143.0	144.6	147.3
27	170.6	143.2	144.3	144.9	147.6	150.3	174.1	142.9	143.2	143.8	145.2	148.1
28	172.0	144.0	145.0	145.8	148.2	151.0	175.5	143.6	143.8	144.4	146.0	148.7
29	173.6	144.7	145.9	146.4	149.0	151.7	177.0	144.5	144.5	145.0	146.7	149.5
30	175.3	145.2	146.6	147.1	149.6	152.4	178.3	145.0	145.3	145.6	147.3	150.1
31	176.8	146.0	147.2	147.9	150.2	153.1	179.7	145.6	145.9	146.2	148.1	150.7
32	178.3	146.5	147.9	148.5	150.8	153.6	181.3	146.3	146.5	146.9	148.9	151.5
33	179.7	147.1	148.4	148.9	151.4	154.3	182.8	146.7	147.1	147.6	149.5	152.3
34	181.3	147.7	149.1	149.6	152.0	154.9	184.3	147.3	147.6	148.4	150.2	152.7
35	183.0	148.1	149.6	150.2	152.5	155.5	185.8	147.9	148.1	149.1	150.8	153.4
36	184.7	148.6	150.0	150.7	153.0	156.1	187.2	148.6	148.7	149.7	151.3	154.0
37	186.4	149.0	150.7	151.4	153.5	156.7	188.8	148.9	149.3	150.3	151.9	154.5
38	188.2	149.3	151.3	151.8	154.1	157.3	190.3	149.3	149.9	150.9	152.5	155.2
39	190.0	149.9	151.8	152.5	154.6	157.9	192.0	150.0	150.4	151.4	153.0	155.9
40	191.6	150.4	152.4	152.9	155.1	158.4	193.3	150.5	150.9	151.9	153.3	156.3
41	193.4	150.6	152.8	153.6	155.7	159.0	194.9	151.2	151.5	152.5	153.7	156.9
42	195.5	151.6	153.4	154.1	156.4	159.5	196.3	151.6	151.9	152.9	154.2	157.4
43	197.4	152.0	153.7	154.6	156.8	160.1	197.8	152.0	152.4	153.3	154.8	157.8
44	199.1	153.9	154.0	155.3	157.3	160.6	199.2	152.7	153.0	153.9	155.1	158.3
45	201.2	156.9	154.2	155.7	157.8	161.0	200.9	152.5	153.3	154.6	155.5	158.9
46	203.5	160.5	154.9	156.2	158.3	161.5	202.5	154.1	153.6	155.0	156.1	159.2
47	205.4	165.0	155.7	156.7	158.8	162.0	204.2	157.5	154.3	155.4	156.5	159.5
48	207.7	171.2	156.4	157.2	159.2	162.5	205.9	161.3	154.8	156.0	156.8	160.1
49	209.9	177.5	156.7	157.7	159.6	163.0	207.7	167.1	154.9	156.4	157.1	160.6
50	212.2	183.6	158.2	158.1	160.1	163.4	209.2	174.9	155.4	156.8	157.7	160.9
51	214.4	189.0	161.4	158.8	160.6	163.9	211.0	182.4	155.8	156.8	158.2	161.3
52	217.0	193.6	166.0	159.1	161.1	164.3	212.3	188.3	157.7	157.4	158.5	161.7
53	219.6	197.7	172.4	159.4	161.6	164.8	214.4	193.1	162.0	158.3	158.9	162.2
54	222.3	201.5	179.6	159.7	162.1	165.3	215.7	196.6	168.0	158.4	159.4	162.6

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	TX	TX	TX	TX	TX	TX	IL	IL	IL	IL	IL	IL
Grade	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	836037	839389	839390	839391	839392	839393	838796	839394	839395	839396	839397	839398
Date	9/4/08	10/2/08	10/2/08	10/2/08	10/2/08	10/2/08	9/23/08	9/30/08	9/30/08	9/30/08	9/30/08	9/30/08
Distillation, D86 (^{o}F)												
55	225.0	205.5	188.5	160.8	162.4	165.7	217.6	200.5	176.4	158.8	159.5	162.8
56	227.7	208.8	196.1	163.6	162.8	166.2	219.8	203.5	185.6	159.8	160.2	163.2
57	230.3	212.5	202.8	168.9	163.2	166.7	221.6	206.8	193.6	161.2	161.1	163.6
58	233.1	215.7	208.0	179.4	163.7	166.8	223.5	208.6	199.5	163.8	161.5	163.9
59	236.2	218.8	213.1	192.0	164.3	167.3	225.0	211.0	204.1	169.5	161.8	164.3
60	239.6	222.2	217.2	200.9	164.4	167.7	227.0	213.4	207.6	181.2	162.1	164.7
61	242.5	225.8	221.3	208.2	164.8	168.0	229.4	215.9	210.6	195.3	162.3	164.9
62	245.4	229.3	225.1	214.7	165.7	168.4	231.0	218.3	213.7	204.4	162.6	165.2
63	248.9	232.9	228.7	220.9	166.5	168.7	233.0	219.2	216.9	210.4	163.0	165.5
64	252.4	236.3	232.8	224.9	167.7	169.2	235.4	222.1	219.9	214.2	163.5	165.9
65	255.3	239.5	236.5	228.2	175.3	169.7	237.9	223.2	222.4	217.7	163.6	166.2
66	258.7	242.5	240.0	233.2	195.3	170.0	239.5	221.3	224.8	221.1	163.8	166.4
67	261.7	246.1	243.4	236.6	215.2	170.2	242.1	225.9	227.1	223.7	169.0	166.9
68	265.0	249.6	247.0	241.9	227.3	170.6	244.3	230.8	228.4	226.5	186.9	167.2
69	268.0	253.1	251.0	247.7	232.9	171.1	246.5	234.6	230.0	229.5	207.8	167.3
70	271.1	257.1	254.6	251.7	241.8	171.6	249.3	237.7	232.0	232.8	218.4	167.6
71	274.4	260.4	258.0	255.8	249.0	172.0	252.0	238.8	233.5	235.2	223.5	168.0
72	277.5	263.9	261.7	258.7	255.1	172.5	255.1	234.6	237.0	237.4	227.7	168.1
73	280.6	267.0	265.2	262.4	259.4	173.3	258.5	239.2	241.5	239.5	231.7	168.3
74	283.3	271.1	268.5	265.1	262.4	174.4	261.2	245.1	244.9	242.1	235.7	168.7
75	286.7	274.7	271.7	268.0	265.4	177.4	264.7	250.4	247.4	244.5	239.3	169.3
76	289.9	278.1	274.2	273.3	268.9	196.3	268.4	255.1	244.8	247.2	242.1	169.9
77	292.6	281.5	277.5	279.3	271.9	250.4	271.0	258.8	246.3	250.9	245.1	170.1
78	295.1	281.3	283.1	283.7	275.4	260.8	274.1	262.1	253.6	253.2	248.3	170.4
79	297.7	285.8	288.4	287.3	279.9	266.7	278.7	266.0	260.4	255.9	251.5	171.1
80	300.0	292.3	292.2	290.5	284.9	271.9	283.3	270.0	266.2	260.3	256.0	192.6
81	301.0	296.8	295.1	293.7	289.3	277.5	287.6	273.5	271.4	266.1	260.5	239.8
82	306.6	300.5	298.0	296.9	293.2	281.9	292.1	277.8	276.0	271.9	262.9	248.2
83	310.6	303.6	301.3	300.2	296.5	285.9	296.5	281.5	280.4	277.6	266.1	253.5
84	314.0	305.8	304.6	302.7	298.6	289.5	301.3	285.5	284.6	283.1	271.4	259.8
85	316.9	308.2	307.6	304.7	301.0	293.2	306.3	290.5	289.3	287.6	277.4	267.2
86	319.6	309.7	311.0	310.1	305.8	296.8	311.7	295.4	294.8	292.6	284.9	274.2
87	322.3	315.2	314.3	314.6	310.7	301.2	317.6	302.3	300.4	297.6	293.1	281.4
88	325.9	320.3	318.1	318.9	315.2	305.7	322.9	310.2	306.2	304.4	300.2	288.0
89	329.1	324.5	321.2	322.4	318.9	309.7	328.5	317.6	312.7	311.4	306.8	295.6
90	332.8	328.2	324.5	326.0	322.6	314.2	333.4	324.5	319.9	318.3	314.3	304.4
91	337.2	331.7	329.7	329.2	326.1	319.4	336.5	330.8	327.0	325.4	321.9	313.6
92	340.4	336.0	335.2	332.3	330.2	325.4	341.9	337.1	332.8	332.0	328.8	322.1
93	345.4	341.2	341.3	339.5	336.9	330.9	351.1	340.5	339.1	337.5	335.5	330.5
94	352.7	346.6	347.4	347.9	343.9	337.1	358.2	350.7	347.0	345.8	342.7	338.1
95	359.6	353.4	354.5	356.4	352.0	345.1	364.9	360.3	355.9	355.2	351.8	346.2
96	369.4	360.1	363.6	365.8	362.1	352.9	373.8	370.0	365.7	365.4	362.6	355.6
97	380.0	373.2	374.6	377.8	374.7	359.8	385.0	380.5	376.9	376.9	373.2	367.7
98	396.9	389.2	392.1	394.8	389.7	378.3	399.6	394.7	391.5	391.4	388.8	383.7
99												
FBP	410.6	403.9	405.7	403.0	401.4	396.8	412.0	403.9	403.7	402.4	403.2	396.7
Recovered (%)	97.6	97.7	97.5	96.5	97.0	97.9	98.5	97.5	97.3	97.3	97.1	97.6
Residue (%)	0.8	0.6	0.8	1.0	0.9	0.6	0.8	0.9	0.8	0.9	0.9	0.9
Loss (%)	1.6	1.7	1.7	2.5	2.1	1.5	0.7	1.6	1.9	1.8	2.0	1.5
$T_{V/L=20}$ (^{o}F)	157.8	134.1	134.0	134.0	134.4	135.9	165.2	136.9	136.7	136.9	137.0	138.2
RON							87.2	92.5	93.6	94.9	97.4	99.6
MON							80.6	83.5	83.9	84.4	85.3	88.2
(R+M)/2							83.9	88.0	88.8	89.7	91.4	93.9

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	844187	845575	845576	845577	845578	845579	844188	845580	845581	845582	845583	845584
Date	11/10/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08	11/10/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08
Dry Vapor Pressure Equivalent (psi)	5.10	6.66	6.57	6.57	6.56	6.27	5.22	6.61	6.58	6.56	6.48	6.44
Specific Gravity	0.7694	0.7670	0.7677	0.7684	0.7700	0.7727	0.7612	0.7614	0.7622	0.7631	0.7647	0.7682
Ethanol (Vol%)	0.00	9.57	12.06	14.47	19.85	32.60	0.00	10.19	13.05	16.30	19.63	32.86
Ethanol (Wt%)	0.00	9.91	12.48	14.96	20.47	33.49	0.00	10.63	13.60	16.96	20.38	33.96
Distillation, D86 (^{o}F)												
IBP	107.2	111.7	111.4	110.2	110.5	110.9	105.7	110.4	108.8	110.6	112.6	112.0
1	116.2	115.8	114.9	115.4	115.2	116.0	113.3	114.9	114.2	118.0	116.6	120.2
2	125.1	119.8	118.4	120.6	119.9	121.0	120.9	119.4	119.5	125.3	120.6	127.1
3	132.1	123.9	121.9	125.3	124.6	126.5	130.1	124.0	125.2	130.0	124.5	131.5
4	137.3	128.0	125.6	128.7	128.8	131.1	136.5	128.0	129.3	132.4	128.8	134.2
5	141.8	131.2	129.0	131.2	131.5	133.8	140.9	130.8	131.7	134.2	131.8	136.4
6	145.2	133.1	131.4	133.2	133.9	136.1	144.1	132.8	133.5	135.8	134.1	138.2
7	147.9	134.6	133.2	134.8	135.9	138.0	147.0	134.4	135.2	137.1	135.7	139.6
8	150.7	135.9	134.7	136.3	137.4	139.4	149.5	135.7	136.6	138.1	137.2	140.9
9	153.1	137.1	135.8	137.5	138.7	140.6	151.7	136.9	137.7	138.8	138.4	142.0
10	155.4	138.0	136.9	138.5	139.8	141.8	154.0	138.1	138.7	139.9	139.3	142.8
11	157.4	139.0	137.8	139.4	140.8	142.8	156.2	139.1	139.5	140.7	140.4	143.7
12	159.6	139.8	138.7	140.2	141.9	143.8	158.0	139.9	140.3	141.5	141.4	144.5
13	161.5	140.7	139.6	141.0	142.8	144.8	159.9	140.6	141.1	142.6	142.3	145.5
14	163.4	141.5	140.5	142.0	143.7	145.6	161.7	141.4	141.9	143.3	143.0	146.5
15	165.3	142.2	141.4	142.9	144.7	146.4	163.5	142.2	142.6	144.1	143.6	147.2
16	167.2	143.0	142.2	143.8	145.5	147.3	165.2	142.9	143.4	145.0	144.5	148.0
17	169.2	143.8	143.1	144.8	146.3	148.3	166.9	143.6	144.1	145.6	145.5	148.9
18	171.2	144.5	143.8	145.6	147.3	149.2	168.8	144.4	144.8	146.3	146.3	149.6
19	173.1	145.1	144.5	146.3	148.3	150.0	170.7	145.2	145.7	147.1	147.0	150.3
20	175.2	145.7	145.2	147.0	149.2	150.7	172.5	146.1	146.5	147.9	147.8	151.1
21	177.1	146.4	146.0	147.8	149.9	151.5	174.4	146.9	147.2	148.6	148.5	151.8
22	179.0	147.2	147.0	148.7	150.8	152.3	176.1	147.8	147.9	149.3	149.3	152.5
23	181.1	148.0	147.7	149.6	151.6	153.0	177.8	148.6	148.4	150.0	149.9	153.2
24	183.5	148.9	148.3	150.5	152.3	153.8	180.0	149.3	149.1	150.6	150.6	153.8
25	185.5	149.7	149.2	151.2	153.0	154.5	181.8	149.9	149.9	151.2	151.3	154.5
26	187.5	150.4	150.1	151.9	153.7	155.2	183.8	150.6	150.7	151.9	152.1	155.1
27	189.5	151.1	150.8	152.5	154.3	156.0	185.8	151.3	151.4	152.5	152.6	155.7
28	191.8	151.7	151.5	152.9	155.0	156.9	187.9	152.2	151.9	153.2	153.2	156.4
29	194.0	152.3	152.1	153.6	155.7	157.5	189.7	153.0	152.5	153.8	153.9	157.1
30	196.1	152.9	152.8	154.3	156.4	158.0	191.6	153.5	152.9	154.4	154.5	157.6
31	198.3	153.5	153.4	154.8	157.1	158.7	193.5	153.9	153.5	154.9	155.2	158.1
32	200.5	154.4	154.1	155.5	157.7	159.3	195.5	154.3	154.3	155.4	155.8	158.7
33	202.6	154.9	154.7	156.0	158.4	159.9	197.4	154.8	154.9	156.1	156.5	159.2
34	204.7	155.6	155.4	156.7	158.8	160.5	199.2	155.1	155.3	156.8	157.2	159.9
35	206.9	157.1	156.2	157.4	159.4	160.9	200.9	155.3	155.9	157.1	157.5	160.4
36	208.8	158.3	156.9	158.0	160.0	161.4	203.0	156.5	156.4	157.6	158.1	160.9
37	211.0	159.5	157.6	158.4	160.5	162.0	204.9	158.3	157.0	158.1	158.6	161.3
38	213.3	162.5	158.0	159.0	161.0	162.5	206.5	159.8	157.7	158.6	159.1	161.6
39	215.1	167.2	158.5	159.6	161.6	163.0	208.5	162.4	158.4	159.2	159.5	161.9
40	217.0	172.7	159.3	160.2	162.1	163.4	210.4	166.8	158.6	159.6	160.0	162.3
41	219.3	179.0	160.0	160.8	162.4	163.8	212.1	172.0	158.7	160.1	160.6	162.7
42	220.9	185.8	160.3	161.4	162.9	164.1	213.6	177.2	159.7	160.5	161.1	163.1
43	222.8	192.8	161.1	161.8	163.2	164.5	215.4	182.9	160.6	160.8	161.5	163.5
44	224.6	199.0	163.7	162.0	163.6	165.0	217.1	189.7	163.0	161.2	161.8	163.8
45	226.5	204.5	167.6	162.6	164.2	165.4	218.7	196.3	167.2	161.9	162.2	164.1
46	228.2	209.2	172.7	163.7	164.5	165.6	220.3	202.2	172.6	162.6	162.6	164.5
47	229.9	213.3	180.2	165.3	164.6	166.0	222.1	206.9	180.1	162.8	163.1	164.8
48	231.7	217.0	190.3	166.0	165.2	166.4	223.7	210.6	189.0	163.5	163.8	165.1
49	233.2	220.3	200.1	167.7	165.7	166.6	225.3	213.7	197.8	165.8	164.4	165.3
50	235.0	223.2	208.1	174.0	166.0	166.8	226.8	216.4	205.0	169.4	164.9	165.6
51	236.7	225.9	214.6	182.1	166.3	167.1	228.3	218.8	210.4	175.9	164.8	165.9
52	238.4	228.5	219.5	193.1	166.8	167.5	229.8	220.8	214.3	185.4	164.9	166.2
53	239.9	230.8	223.2	204.9	167.2	167.8	231.1	222.7	217.4	197.4	164.9	166.5
54	241.6	232.7	226.2	214.4	167.6	168.0	232.5	225.0	220.7	207.9	165.5	166.8

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
State	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
Grade	PU	PU	PU	PU	PU	PU	PU	PU	PU	PU	PU	PU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	844187	845575	845576	845577	845578	845579	844188	845580	845581	845582	845583	845584
Date	11/10/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08	11/10/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08
Distillation, D86 (^{o}F)												
55	243.1	234.7	229.0	221.3	167.4	168.3	233.8	227.2	223.6	214.7	165.9	167.1
56	244.7	236.5	231.6	226.0	168.7	168.5	234.9	228.7	225.8	219.5	166.0	167.2
57	246.5	238.2	234.0	229.7	169.6	168.5	236.1	230.1	227.9	223.4	166.9	167.4
58	248.0	240.1	236.1	232.9	171.2	168.7	237.7	231.5	229.9	226.2	168.1	167.7
59	249.3	241.7	237.6	235.5	173.0	169.1	239.1	233.3	231.8	228.5	169.6	167.9
60	250.2	243.0	239.0	237.7	180.4	169.4	240.4	235.0	233.7	230.6	175.9	168.1
61	251.9	244.6	241.2	239.6	201.0	169.6	241.6	236.3	235.7	232.3	195.9	168.3
62	253.8	246.5	243.6	241.8	221.4	169.7	243.0	236.4	236.8	233.8	213.0	168.7
63	255.6	248.3	245.5	244.1	229.6	169.9	244.8	237.0	237.2	235.5	222.7	168.8
64	257.2	249.9	247.0	246.2	234.2	170.2	246.2	239.3	238.6	237.4	226.8	169.0
65	259.0	251.2	248.5	248.0	236.6	170.5	247.5	242.3	240.5	239.7	229.3	169.4
66	260.9	253.1	250.3	249.6	240.2	170.9	249.3	244.7	241.7	242.0	232.9	169.8
67	262.8	255.2	252.1	251.0	244.4	171.2	251.0	244.1	243.0	243.8	236.1	170.1
68	265.0	257.3	253.4	252.6	248.4	171.7	252.6	241.1	244.6	244.9	238.2	170.4
69	267.2	259.4	255.0	254.5	251.6	172.6	254.1	242.2	247.0	244.8	241.0	171.1
70	269.7	261.6	256.8	255.4	254.2	173.7	255.8	246.8	249.5	245.9	243.6	171.6
71	272.0	263.7	258.9	255.3	256.3	181.1	257.9	251.3	251.2	248.7	246.4	172.3
72	274.1	265.8	261.5	256.8	258.0	212.0	260.0	255.0	253.2	251.7	248.2	175.2
73	276.6	268.2	264.5	260.5	259.7	239.5	262.0	257.7	255.4	254.2	249.8	197.8
74	279.8	270.7	267.4	264.4	261.0	245.5	264.4	259.9	257.5	256.1	251.8	231.3
75	282.9	273.2	269.8	268.4	262.9	250.4	267.2	262.2	257.1	254.6	252.6	238.4
76	285.8	276.2	272.4	271.9	265.8	254.7	270.1	264.4	257.9	255.0	253.3	242.2
77	289.0	279.3	275.7	275.0	269.2	258.9	273.1	266.8	262.2	259.6	256.7	246.1
78	292.5	282.4	279.3	277.6	273.3	263.0	276.0	269.8	267.1	264.4	260.4	250.3
79	295.8	285.9	282.7	279.9	276.3	266.4	279.4	272.7	270.9	268.7	263.6	254.5
80	299.6	289.8	286.1	281.8	279.1	270.0	283.0	275.0	273.9	272.5	265.9	258.7
81	303.0	293.7	289.9	284.8	282.6	273.8	286.9	277.9	277.5	276.1	268.1	262.7
82	306.8	297.6	294.1	289.9	287.2	277.3	291.0	281.8	281.8	279.4	270.9	267.0
83	310.3	301.6	298.3	294.9	292.6	281.3	295.6	286.7	285.7	283.1	276.1	270.8
84	313.4	305.5	302.8	299.8	297.2	286.1	300.5	291.7	290.1	287.5	281.9	274.7
85	316.1	309.7	307.4	304.7	300.7	291.3	306.2	297.1	295.0	292.8	287.8	278.5
86	320.4	314.4	311.9	309.9	305.6	296.9	311.1	302.5	300.2	298.3	293.6	283.2
87	324.9	318.5	316.1	314.7	311.8	302.9	316.3	308.2	305.8	304.4	298.8	289.4
88	328.2	321.8	317.7	318.7	317.0	309.2	320.8	314.3	310.9	310.5	303.7	294.7
89	331.9	326.3	321.5	321.8	321.7	315.3	321.9	320.1	317.3	316.8	311.0	300.8
90	335.1	331.1	328.1	326.0	325.9	320.2	329.5	325.6	324.0	323.0	318.2	308.7
91	338.6	335.2	332.5	331.2	328.3	324.7	335.0	330.9	328.5	327.2	324.9	315.9
92	341.9	339.0	337.0	335.8	333.1	328.5	341.5	336.6	334.3	333.1	330.3	323.6
93	345.1	343.0	341.1	340.5	338.1	332.9	346.8	342.4	340.8	339.7	335.0	330.5
94	348.9	347.1	345.4	345.3	342.9	339.0	351.9	348.7	347.3	345.9	342.4	338.2
95	354.3	351.6	350.6	349.9	348.6	344.9	357.8	355.4	354.0	352.8	350.2	345.7
96	361.0	358.0	356.5	355.3	354.5	352.1	364.9	362.5	361.4	360.5	358.2	354.7
97	371.8	368.4	365.8	365.1	364.5	362.6	374.7	371.8	370.9	369.7	368.0	365.2
98	393.6	384.0	381.6	381.6	383.1	380.2	391.7	385.3	386.0	384.2	380.9	381.7
99	407.5											
FBP	414.2	402.0	402.7	396.8	402.3	395.9	409.2	395.8	401.5	400.0	396.1	396.3
Recovered (%)	98.1	96.4	97.2	97.8	97.3	97.9	98.1	97.3	98.0	98.0	97.3	98.5
Residue (%)	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.9
Loss (%)	1.1	2.9	2.1	1.4	1.9	1.3	1.1	2.0	1.2	1.2	1.9	0.6
$T_{V/L=20}$ (^{o}F)		145.8	145.2	144.9	144.7	145.3	172.9	145.7	144.9	144.8	144.5	145.3
RON	98.1	99.9	100.6	101.0	101.7	101.6	97.9	99.1	99.6	100.0	100.8	101.6
MON	86.4	87.6	88.3	88.4	88.9	89.5	86.0	86.9	88.0	88.3	88.3	88.1
(R+M)/2	92.3	93.8	94.5	94.7	95.3	95.6	92.0	93.0	93.8	94.2	94.6	94.8

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer
State	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	844189	845585	845586	845587	845588	845589
Date	11/10/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08
Dry Vapor Pressure Equivalent (psi)	6.39	7.75	7.78	7.76	7.68	7.30
Specific Gravity	0.7314	0.7341	0.7353	0.7368	0.7400	0.7464
Ethanol (Vol%)	0.00	9.61	11.84	14.14	18.95	31.29
Ethanol (Wt%)	0.00	10.40	12.78	15.23	20.33	33.28
Distillation, D86 (^{o}F)						
IBP	103.0	102.9	102.5	105.7	104.0	106.8
1	110.1	108.0	107.3	108.3	107.9	111.6
2	117.2	113.2	112.1	113.7	111.8	116.4
3	122.8	117.6	118.5	119.4	115.8	120.7
4	126.6	120.2	121.3	122.1	120.4	124.0
5	129.7	122.2	123.4	124.2	123.7	126.3
6	132.2	124.0	125.3	125.9	125.5	128.1
7	134.2	125.4	126.6	127.3	127.1	129.6
8	136.0	126.5	127.4	128.6	128.4	130.9
9	137.8	127.4	128.3	129.6	129.5	131.9
10	139.3	128.4	129.4	130.4	130.4	132.9
11	140.7	129.1	130.0	131.2	131.3	133.7
12	141.9	129.8	130.9	132.1	132.1	134.5
13	143.2	130.3	131.5	132.8	132.8	135.5
14	144.5	130.8	132.4	133.5	133.5	136.2
15	146.0	131.3	132.8	134.2	134.1	136.8
16	147.5	132.1	133.0	134.9	134.8	137.7
17	149.0	132.7	133.6	135.7	135.5	138.6
18	150.3	133.5	134.3	136.3	136.2	139.4
19	151.7	134.1	135.3	136.9	137.0	140.3
20	152.9	134.6	135.6	137.7	137.8	141.1
21	154.2	135.4	136.3	138.4	138.5	141.9
22	155.4	136.0	137.1	139.0	139.3	142.6
23	156.7	136.7	137.8	139.5	140.0	143.4
24	158.1	137.5	138.3	140.1	140.8	144.1
25	159.7	138.3	139.1	140.8	141.5	144.8
26	161.3	138.9	139.7	141.6	142.1	145.6
27	162.7	139.4	140.4	142.3	142.8	146.4
28	164.2	140.1	140.9	142.9	143.5	147.3
29	165.8	140.7	141.7	143.5	144.3	148.0
30	167.3	141.5	142.6	144.3	145.1	148.5
31	168.7	142.1	143.1	145.0	145.8	149.2
32	170.1	142.6	143.6	145.7	146.4	150.1
33	171.6	143.1	144.4	146.3	147.1	150.8
34	173.3	144.0	145.0	147.0	147.9	151.4
35	175.2	144.6	145.6	147.8	148.6	152.1
36	176.8	145.1	146.2	148.5	149.2	152.6
37	178.5	145.8	146.7	149.0	150.0	153.3
38	180.5	146.5	147.4	149.4	150.6	154.1
39	182.5	147.0	148.1	150.0	151.3	154.8
40	184.3	147.6	148.9	150.8	151.8	155.4
41	186.4	148.2	149.3	151.6	152.5	156.0
42	188.3	149.0	149.9	152.2	153.1	156.6
43	190.1	149.6	150.4	152.6	153.7	157.1
44	191.9	149.9	151.1	153.2	154.4	157.7
45	193.8	150.5	151.9	153.7	154.9	158.3
46	195.9	151.3	152.1	154.4	155.5	158.9
47	198.0	152.3	152.6	155.0	156.2	159.4
48	200.1	154.2	153.3	155.3	156.7	159.9
49	202.2	157.3	153.3	155.9	157.2	160.4
50	204.3	161.3	154.3	156.6	157.7	161.0
51	206.6	167.6	155.1	157.2	158.2	161.4
52	208.3	175.4	156.1	157.6	158.8	161.9
53	210.4	182.7	157.3	158.2	159.3	162.3
54	212.8	189.2	161.4	158.8	159.8	162.7

Refiner BOB	Summer	Summer	Summer	Summer	Summer	Summer
State	TX	TX	TX	TX	TX	TX
Grade	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	844189	845585	845586	845587	845588	845589
Date	11/10/08	11/21/08	11/21/08	11/21/08	11/21/08	11/21/08
Distillation, D86 (^{o}F)						
55	215.0	194.5	168.3	159.4	160.2	163.1
56	217.0	198.7	178.0	160.1	160.8	163.4
57	218.9	202.4	187.2	160.8	161.3	163.9
58	221.0	205.9	194.8	161.9	161.7	164.4
59	223.4	209.3	201.7	165.6	162.2	164.7
60	225.8	212.4	206.0	174.3	162.6	165.1
61	228.3	215.4	210.6	187.8	163.2	165.5
62	230.6	217.4	213.9	200.5	163.6	165.8
63	232.8	219.5	217.0	208.6	164.0	166.1
64	235.2	222.1	220.3	214.6	164.5	166.5
65	237.7	224.6	223.0	219.3	165.4	166.8
66	240.1	226.9	225.9	222.8	165.9	167.1
67	242.6	230.3	228.7	226.4	167.3	167.4
68	245.2	233.3	232.0	230.2	171.6	167.7
69	248.0	236.0	234.8	233.7	186.8	168.0
70	250.8	237.9	237.1	237.0	209.5	168.3
71	253.7	236.2	239.0	240.5	223.5	168.6
72	256.7	237.3	240.5	243.8	229.7	168.8
73	259.8	242.4	243.8	247.0	234.6	169.0
74	262.9	248.3	247.3	249.8	239.1	169.4
75	266.2	253.7	251.0	252.1	243.2	169.7
76	269.7	258.3	255.9	252.6	247.3	170.1
77	273.1	262.0	260.2	253.8	250.9	170.5
78	276.9	265.2	263.5	258.0	253.9	170.7
79	280.9	267.9	267.0	263.5	257.4	171.4
80	284.8	271.3	270.5	269.6	261.7	206.1
81	289.1	275.9	274.7	275.6	266.0	245.2
82	293.6	280.8	278.1	280.7	269.2	254.0
83	298.1	285.4	275.1	285.0	273.6	260.9
84	302.3	290.1	284.4	289.8	279.6	266.6
85	306.1	294.8	293.3	295.0	286.1	272.3
86	311.5	299.9	300.4	300.7	291.9	279.1
87	316.4	305.8	307.4	306.5	293.2	286.6
88	319.8	312.2	312.3	312.2	299.3	293.7
89	326.9	318.5	318.3	317.7	308.7	301.3
90	333.8	322.0	323.9	323.2	316.4	308.5
91	339.5	325.7	330.2	329.4	323.3	314.7
92	344.9	334.0	335.9	335.6	330.5	322.5
93	351.1	342.3	340.1	341.4	337.7	331.3
94	357.7	349.4	346.9	347.6	344.7	339.6
95	364.7	355.7	355.8	355.9	351.7	346.6
96	372.6	362.8	364.5	365.5	359.2	355.0
97	382.7	373.2	374.2	376.0	370.4	366.8
98	395.2	383.9	386.8	388.3	383.3	380.0
99						
FBP	399.2	395.4	397.9	397.8	395.2	389.9
Recovered (%)	97.8	98.1	98.2	98.6	97.3	97.9
Residue (%)	1.0	0.8	0.9	0.9	0.7	0.8
Loss (%)	1.2	1.1	0.9	0.5	2.0	1.3
$T_{V/L=20}$ (^{o}F)	156.4	135.1	134.8	134.7	135.2	136.6
RON	88.2	92.9	93.7	94.7	96.6	99.3
MON	80.4	83.0	83.3	83.8	84.6	87.9
(R+M)/2	84.3	88.0	88.5	89.3	90.6	93.6

CRC Fuel	11	11	11	11	11	11	12	12	12	12	12	12
State	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
Grade	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	893880	893881	893882	893883	893884	893885	893868	893869	893870	893871	893872	893873
Date	10/5/09	10/15/09	10/15/09	10/15/09	10/15/09	10/15/09	10/5/09	10/15/09	10/15/09	10/15/09	10/15/09	10/15/09
Dry Vapor Pressure Equivalent (psi)	13.93	14.80	14.73	14.70	14.56	14.13	14.70	15.54	15.38	15.29	15.11	14.60
Specific Gravity	0.6878	0.698	0.7003	0.7029	0.7079	0.7186	0.6888	0.6988	0.7015	0.704	0.7089	0.7195
Ethanol (Vol%)	0.00	10.36	12.64	14.46	19.52	30.55	0.00	10.06	12.60	14.92	20.16	30.29
Ethanol (Wt%)	0.00	11.78	14.33	16.34	21.89	33.76	0.00	11.43	14.26	16.82	22.58	33.42
Distillation, D86 (^{o}F)												
IBP	76.1	76.3	78.0	78.1	79.6	81.0	73.9	75.8	77.2	76.7	77.6	78.2
1	79.8	80.0	81.5	81.2	82.3	85.0	76.5	78.5	80.6	79.4	81.2	82.1
2	83.4	83.7	84.9	84.3	85.0	89.0	79.1	81.2	84.0	82.1	84.8	86.1
3	86.2	86.8	88.2	87.3	87.7	91.9	81.7	83.9	87.0	84.9	87.9	90.2
4	88.2	88.9	90.2	89.4	89.8	93.9	84.0	86.4	89.0	87.3	90.2	92.5
5	90.0	90.6	91.8	91.3	91.6	95.5	86.2	88.2	90.7	89.3	91.9	94.1
6	91.4	91.8	92.9	92.8	93.2	96.9	87.9	89.7	92.0	90.9	93.4	95.8
7	92.6	92.9	94.1	94.1	94.6	98.2	89.4	91.1	93.2	92.3	94.7	97.2
8	93.7	93.9	95.1	95.2	95.8	99.3	90.6	92.5	94.2	93.6	95.9	98.6
9	94.7	94.8	96.1	96.2	97.0	100.4	91.7	93.6	95.3	94.8	97.0	99.8
10	95.9	95.8	97.1	97.1	97.9	101.5	92.8	94.5	96.2	95.8	98.1	101.0
11	96.8	96.7	98.0	98.0	98.9	102.6	93.7	95.5	97.1	96.8	99.0	102.0
12	97.7	97.5	98.7	98.9	99.7	103.6	94.7	96.5	98.0	97.8	100.0	103.1
13	98.5	98.1	99.4	99.7	100.6	104.6	95.8	97.5	98.8	98.8	101.1	104.3
14	99.4	98.8	100.2	100.4	101.5	105.4	96.8	98.3	99.7	99.7	102.1	105.2
15	100.1	99.7	100.9	101.2	102.5	106.4	97.6	99.1	100.6	100.7	103.1	106.4
16	100.9	100.5	101.7	101.7	103.2	107.3	98.6	99.9	101.4	101.7	103.9	107.6
17	101.7	101.2	102.3	102.6	103.9	108.3	99.6	100.9	102.3	102.6	104.8	108.8
18	102.7	101.9	103.1	103.4	104.9	109.2	100.6	101.7	103.1	103.5	105.8	110.0
19	103.4	102.6	103.9	104.2	105.6	110.1	101.6	102.6	104.2	104.4	106.7	111.3
20	104.2	103.3	104.6	105.1	106.4	111.3	102.6	103.5	105.1	105.3	107.6	112.6
21	105.0	104.0	105.3	105.9	107.0	112.3	103.5	104.3	106.1	106.2	108.6	113.7
22	105.8	104.8	106.2	106.6	107.7	113.2	104.4	105.3	107.0	107.2	109.6	114.8
23	106.6	105.6	107.1	107.2	108.6	114.2	105.5	106.1	107.8	108.2	110.6	116.2
24	107.4	106.4	107.8	108.0	109.4	115.3	106.4	107.0	108.7	109.1	111.9	117.4
25	108.3	107.2	108.6	109.0	110.3	116.6	107.5	107.9	109.7	110.0	113.0	118.5
26	109.1	107.9	109.5	109.8	111.6	117.7	108.5	108.7	110.5	111.0	114.0	120.0
27	110.0	108.7	110.3	110.8	112.6	118.9	109.4	109.7	111.4	111.9	115.1	121.3
28	110.7	109.4	111.2	111.6	113.6	120.3	110.4	110.6	112.4	112.9	116.3	122.7
29	111.4	110.3	112.1	112.7	114.5	121.5	111.3	111.5	113.3	114.0	117.3	123.9
30	112.4	111.2	112.9	113.6	115.4	122.7	112.3	112.4	114.1	115.1	118.5	125.6
31	113.2	112.0	113.6	114.5	116.6	124.1	113.4	113.3	115.2	116.2	119.6	127.3
32	114.1	112.8	114.6	115.6	117.6	125.5	114.6	114.2	116.3	117.4	120.6	128.8
33	115.2	113.7	115.5	116.6	118.8	127.1	115.7	115.3	117.5	118.5	121.9	130.4
34	116.3	114.6	116.6	117.7	119.9	128.4	116.8	116.5	118.6	119.7	123.2	132.0
35	117.3	115.6	117.7	118.7	121.0	129.9	118.1	117.7	119.7	120.8	124.6	133.7
36	118.3	116.6	118.7	119.9	122.3	131.8	119.4	118.8	120.9	122.1	125.7	135.4
37	119.4	117.7	119.6	121.1	123.5	133.5	121.1	119.9	122.1	123.5	127.1	137.2
38	120.6	118.8	120.8	122.2	124.8	135.4	122.2	121.1	123.4	124.7	128.9	138.8
39	122.0	119.9	122.1	123.1	126.2	137.1	123.7	122.3	124.6	126.2	130.4	140.6
40	123.3	121.2	123.2	124.7	127.5	139.1	125.1	123.3	126.1	127.5	131.8	142.5
41	124.9	122.4	124.7	126.2	129.2	141.0	126.6	124.4	127.5	128.9	133.3	144.3
42	126.5	123.6	126.0	127.2	130.8	142.8	128.6	125.7	128.8	130.3	134.9	146.2
43	128.0	124.9	127.2	128.8	132.3	144.6	130.5	127.1	130.2	131.9	136.5	147.9
44	129.8	126.2	128.7	130.4	133.9	146.6	132.4	128.7	131.7	133.4	138.4	149.7
45	131.6	127.5	130.1	132.0	135.7	148.7	134.7	130.2	133.2	134.9	140.2	151.6
46	133.5	128.9	131.5	133.6	137.4	150.3	137.0	131.6	134.7	136.5	141.9	153.0
47	135.6	130.4	132.8	135.3	139.1	151.8	139.5	132.9	136.3	138.2	143.7	154.5
48	137.8	131.8	134.5	136.7	141.1	153.5	141.8	134.5	137.8	140.0	145.4	155.9
49	140.1	133.3	135.8	138.6	142.5	155.2	144.4	135.9	139.4	141.8	147.1	157.2
50	142.7	134.8	137.5	140.3	144.3	156.7	147.5	137.3	141.2	143.4	148.7	158.3
51	145.3	136.4	139.3	142.3	146.3	157.9	150.2	139.1	142.7	145.2	150.2	159.5
52	148.6	138.1	140.7	144.1	147.9	159.1	153.4	140.6	144.2	146.7	151.8	160.4
53	151.9	139.8	142.7	146.0	149.5	160.2	156.8	142.2	145.8	148.2	153.4	161.2
54	155.3	141.5	144.5	147.8	151.4	161.1	160.4	144.1	147.6	149.9	154.8	162.0

CRC Fuel	11	11	11	11	11	11	12	12	12	12	12	12
State	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
Grade	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	893880	893881	893882	893883	893884	893885	893868	893869	893870	893871	893872	893873
Date	10/5/09	10/15/09	10/15/09	10/15/09	10/15/09	10/15/09	10/5/09	10/15/09	10/15/09	10/15/09	10/15/09	10/15/09
Distillation, D86 (^{o}F)												
55	158.6	143.2	146.1	149.3	153.0	161.9	164.1	145.9	149.2	151.6	156.1	162.7
56	162.1	144.9	147.7	151.1	154.5	162.7	168.0	147.6	150.7	153.1	157.3	163.3
57	165.9	146.8	149.7	152.8	155.9	163.3	172.6	149.4	152.1	154.5	158.4	163.6
58	170.2	148.7	151.3	154.3	157.2	163.8	177.2	151.0	153.5	155.9	159.5	164.1
59	174.8	150.5	153.0	155.7	158.2	164.3	182.4	152.5	154.9	157.2	160.4	164.5
60	180.1	152.2	154.8	156.9	159.1	164.7	187.7	154.0	156.2	158.2	161.3	164.9
61	185.5	153.6	156.0	158.1	160.1	165.1	193.7	155.2	157.5	159.2	162.0	165.4
62	191.2	154.9	157.4	159.3	161.1	165.5	198.4	156.6	158.5	160.1	162.6	165.7
63	196.8	156.4	158.7	160.3	161.8	165.8	203.6	158.0	159.4	161.2	163.2	165.9
64	201.5	157.8	159.7	161.2	162.5	166.1	208.2	159.0	160.3	162.1	163.7	166.1
65	206.4	158.9	160.5	162.0	163.0	166.4	211.6	160.3	161.2	162.6	164.2	166.4
66	210.6	159.8	161.6	162.6	163.6	166.7	214.5	161.9	162.0	163.1	164.7	166.7
67	214.2	160.9	162.3	163.1	163.9	167.0	217.0	163.5	162.7	163.7	165.0	166.9
68	216.6	162.3	163.1	163.7	164.4	167.2	219.0	169.1	163.6	164.3	165.4	167.1
69	219.1	163.8	163.9	164.3	164.8	167.4	219.9	187.0	164.7	164.8	165.7	167.4
70	216.2	170.4	164.8	164.8	165.3	167.5	216.8	205.3	165.8	165.3	166.0	167.6
71	219.4	190.6	166.4	165.2	165.4	167.7	222.6	214.7	167.0	165.8	166.3	167.8
72	224.5	211.4	167.5	165.7	165.7	167.9	227.1	219.3	176.3	166.2	166.6	168.1
73	228.0	217.6	170.7	166.3	165.8	168.1	229.8	221.9	200.8	166.6	166.9	168.3
74	230.9	220.4	194.3	166.8	166.3	168.3	232.1	223.4	218.0	167.2	167.2	168.5
75	233.1	222.2	217.1	167.2	166.5	168.5	233.8	225.0	222.6	169.3	167.4	168.7
76	234.9	223.9	223.2	170.0	166.7	168.7	235.1	226.4	225.2	192.4	167.6	168.9
77	236.6	226.3	226.1	183.5	167.0	168.9	236.2	228.1	227.1	216.7	168.1	169.1
78	237.8	228.0	228.4	219.2	167.3	169.1	237.5	229.7	228.8	225.1	168.6	169.3
79	239.0	229.8	230.3	225.2	167.5	169.3	238.8	231.8	230.8	228.0	169.0	169.5
80	240.5	232.0	231.7	228.1	167.9	169.5	240.3	234.6	232.9	230.8	169.3	169.7
81	242.0	234.4	233.7	230.9	168.3	169.7	241.8	237.2	235.1	233.1	180.4	169.9
82	243.4	236.7	235.9	233.9	169.1	169.9	243.4	237.5	237.2	235.4	211.0	170.0
83	245.3	238.9	238.2	236.5	213.5	170.1	245.2	237.7	239.7	238.0	232.2	170.2
84	247.3	241.0	241.1	238.9	229.4	170.4	247.1	240.3	242.0	240.8	235.1	170.3
85	249.5	243.2	243.8	241.6	233.2	170.6	249.4	243.0	244.0	243.3	237.8	170.4
86	251.9	246.4	245.9	244.6	236.5	170.8	252.2	245.4	247.3	245.0	241.1	170.7
87	255.1	249.7	248.8	248.3	240.0	171.3	255.5	249.1	251.1	245.7	244.8	171.0
88	258.8	253.3	250.1	252.4	244.5	171.9	259.6	252.9	254.8	246.2	248.5	171.5
89	263.1	257.7	254.7	256.0	248.6	172.3	263.6	257.3	259.0	254.3	253.0	173.1
90	268.6	263.3	260.5	260.2	253.1	171.7	269.3	262.6	263.8	257.7	258.2	193.8
91	275.4	269.5	267.3	265.4	259.7	224.7	276.7	270.3	270.0	262.2	264.3	249.8
92	284.7	277.3	275.9	272.5	266.8	256.1	284.9	278.8	278.8	273.0	271.9	262.3
93	294.7	286.0	285.8	281.3	275.0	267.8	295.9	289.1	288.8	284.6	281.5	271.3
94	305.4	297.5	296.3	294.1	284.4	279.5	308.9	301.3	302.3	296.1	293.4	282.6
95	322.1	312.7	310.0	308.5	300.2	293.9	324.1	314.3	317.8	309.9	307.6	298.3
96	338.1	329.4	327.2	328.2	318.9	312.8	335.3	329.8	331.4	326.9	325.3	315.2
97	354.2	345.6	345.0	347.9	336.1	333.0	352.4	348.5	345.1	342.6	343.6	334.1
98	373.4	362.6	358.7		357.1	354.3	372.1	367.7	364.5		364.4	354.2
99												
FBP	378.6	375.8	360.2	364.7	372.7	372.2	385.5	380.8	379.7	348.4	376.5	375.5
Recovered (%)	97.8	97.7	97.5	97.0	97.3	98.1	97.4	97.1	97.6	96.0	97.7	98.4
Residue (%)	1.3	1	1.5	1.5	1	0.8	1	1	1	2.1	1	0.9
Loss (%)	0.9	1.3	1	1.5	1.7	1.1	1.6	1.9	1.4	1.9	1.3	0.7
$T_{V/L=20}$ (^{o}F)	105.70	101.60	102.50	101.60	104.00	104.70	104.40	99.90	101.10	100.30	103.30	105.90
RON												
MON												
(R+M)/2												

CRC Fuel	8	8	8	8	8	8
State	MI	MI	MI	MI	MI	MI
Grade	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	893874	893875	893876	893877	893878	893879
Date	10/5/09	10/15/09	10/15/09	10/15/09	10/15/09	10/15/09
Dry Vapor Pressure Equivalent (psi)	14.08	14.82	14.80	14.71	14.56	14.04
Specific Gravity	0.697	0.7066	0.7085	0.7109	0.7155	0.7252
Ethanol (Vol%)	0.00	10.34	12.70	15.10	20.19	30.77
Ethanol (Wt%)	0.00	11.62	14.23	16.86	22.41	33.69
Distillation, D86 (^{o}F)						
IBP	73.6	75.8	76.0	77.0	77.6	78.4
1	75.8	78.6	79.5	80.6	80.9	82.2
2	78.1	81.5	83.1	84.1	84.2	86.0
3	80.3	84.3	86.6	87.6	87.6	89.6
4	82.9	87.7	89.5	90.6	90.5	92.5
5	85.9	90.2	91.5	92.6	92.7	95.2
6	88.4	92.0	93.5	94.4	94.5	97.6
7	90.2	93.5	95.0	96.0	96.3	99.5
8	91.9	95.0	96.3	97.4	97.8	101.0
9	93.5	96.5	97.7	98.8	99.5	102.5
10	94.8	97.8	99.0	100.1	101.0	104.0
11	96.2	99.0	100.2	101.4	102.3	105.6
12	97.6	100.2	101.4	102.4	103.7	107.2
13	98.9	101.3	102.7	103.5	105.1	108.7
14	100.2	102.5	103.8	104.8	106.4	110.2
15	101.5	103.5	104.9	106.1	107.6	111.9
16	102.8	104.8	106.1	107.2	108.9	113.4
17	104.1	105.8	107.1	108.3	110.0	114.6
18	105.2	106.8	108.1	109.6	111.2	115.9
19	106.6	107.9	109.1	110.9	112.6	117.5
20	107.9	109.1	110.3	111.8	113.9	119.1
21	109.2	110.2	111.5	112.9	115.0	120.6
22	110.8	111.3	112.8	114.0	116.4	122.2
23	112.2	112.4	114.0	115.5	117.8	123.8
24	113.4	113.5	115.1	116.8	119.1	125.1
25	114.9	114.9	116.3	118.1	120.4	126.4
26	116.3	116.1	117.7	119.3	121.7	128.1
27	117.8	117.1	119.0	120.4	122.9	129.7
28	119.3	118.3	120.0	121.7	124.3	131.2
29	120.9	119.5	121.2	123.0	125.7	133.0
30	122.5	120.8	122.6	124.1	127.2	134.9
31	123.9	122.1	123.8	125.3	128.5	136.7
32	125.6	123.2	125.1	126.7	129.9	138.3
33	127.4	124.2	126.4	128.2	131.5	139.9
34	129.2	125.7	127.7	129.5	133.0	141.5
35	131.2	127.1	129.0	131.1	134.5	143.1
36	133.1	128.5	130.6	132.3	136.1	144.7
37	135.0	129.9	132.1	133.8	137.9	146.3
38	137.1	131.1	133.2	135.1	139.4	148.1
39	139.2	132.4	134.2	136.7	140.9	149.6
40	141.6	133.8	135.4	138.2	142.4	151.1
41	144.0	135.4	137.1	139.7	143.7	152.4
42	146.5	136.6	138.9	141.1	145.2	153.7
43	149.2	138.2	140.3	142.6	146.7	154.9
44	151.8	139.6	142.0	144.1	148.3	156.1
45	154.6	141.0	143.5	145.5	149.8	157.3
46	157.5	142.5	144.8	147.0	151.0	158.3
47	160.5	144.1	146.3	148.4	152.4	159.2
48	163.8	145.6	147.7	149.8	153.7	160.0
49	167.4	147.0	149.1	151.1	155.0	160.8
50	171.0	148.4	150.7	152.4	156.2	161.5
51	174.6	149.6	151.8	153.5	157.3	162.2
52	178.8	151.0	153.2	154.7	158.2	162.6
53	183.4	152.2	154.3	155.8	159.1	163.1
54	188.1	153.4	155.6	156.9	160.0	163.5

CRC Fuel	8	8	8	8	8	8
State	MI	MI	MI	MI	MI	MI
Grade	RU	RU	RU	RU	RU	RU
Nominal Ethanol Concentration (vol%)	0.0%	10.0%	12.5%	15.0%	20.0%	30.0%
Sample Id	893874	893875	893876	893877	893878	893879
Date	10/5/09	10/15/09	10/15/09	10/15/09	10/15/09	10/15/09
Distillation, D86 (^{o}F)						
55	192.5	154.8	156.7	157.8	160.8	164.0
56	196.7	155.8	157.6	158.6	161.6	164.4
57	200.8	157.0	158.5	159.5	162.2	164.7
58	204.7	157.8	159.5	160.2	162.8	165.0
59	208.2	159.0	160.1	160.9	163.4	165.2
60	211.2	160.9	161.0	161.6	163.9	165.5
61	214.0	162.3	161.6	162.3	164.4	165.7
62	216.2	164.5	162.2	162.7	164.9	165.9
63	218.1	171.3	163.1	163.2	165.2	166.2
64	219.9	188.1	164.2	163.7	165.5	166.4
65	221.4	203.9	165.1	164.3	165.8	166.6
66	222.8	212.8	167.5	164.7	166.1	166.8
67	224.4	217.2	176.3	165.2	166.4	167.0
68	226.1	219.7	200.4	166.0	166.6	167.2
69	227.6	222.0	213.8	167.1	166.9	167.4
70	229.5	223.4	220.1	169.6	167.1	167.5
71	231.1	224.5	222.7	182.9	167.4	167.6
72	232.1	226.5	224.4	212.7	167.8	167.8
73	233.2	229.4	226.0	221.9	168.1	168.0
74	234.2	232.3	227.1	224.9	168.7	168.2
75	235.4	234.3	229.1	226.8	169.9	168.4
76	236.7	235.6	231.1	228.4	170.8	168.5
77	237.7	235.7	232.6	230.8	177.2	168.7
78	239.4	236.1	234.6	233.4	211.4	168.9
79	241.3	237.2	236.8	235.4	228.6	169.0
80	243.1	238.6	238.8	237.8	231.9	169.3
81	245.0	239.8	240.5	240.0	234.4	169.5
82	247.2	241.6	242.5	242.3	236.4	169.8
83	249.4	244.4	244.9	244.2	238.5	170.1
84	252.0	247.2	247.5	246.0	241.5	170.4
85	254.8	250.7	250.3	248.0	245.0	170.9
86	258.3	254.7	253.4	251.6	248.9	170.7
87	262.2	258.4	257.4	254.3	251.2	208.7
88	266.9	262.2	261.3	257.0	253.5	240.6
89	272.8	266.8	266.3	260.6	254.6	248.6
90	279.2	272.7	272.5	266.5	261.8	254.1
91	287.1	280.0	279.6	274.8	268.9	260.8
92	297.0	288.6	287.9	285.1	278.7	270.6
93	308.0	299.6	298.8	296.1	291.4	281.9
94	319.8	312.8	312.8	309.9	305.6	296.1
95	332.3	326.9	327.8	325.6	319.1	312.2
96	346.2	340.2	342.2	339.9	334.6	328.5
97	361.3	354.3	353.2	354.1	350.1	346.4
98	380.4	372.7	374.3		368.9	368.6
99						
FBP	395.2	379.4	379.9	380.7	375.0	382.2
Recovered (%)	97.0	97.0	97.1	97.2	96.8	97.9
Residue (%)	1	1.1	1.2	1.3	1.3	0.9
Loss (%)	2	1.9	1.7	1.5	1.9	1.2
$T_{V/L=20}$ (^{o}F)	108.70	103.10	105.20	103.50	107.00	107.30
RON						
MON						
(R+M)/2						