

RFG/Anti-Dumping Questions and Answers October 12, 2006

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Transportation and Regional Programs Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

RFG/ANTI-DUMPING QUESTIONS AND ANSWERS, OCTOBER 12, 2006

The following are responses to questions received by the Environmental Protection Agency (EPA) concerning the manner in which the EPA intends to implement and assure compliance with the reformulated gasoline and anti-dumping regulations at 40 CFR Part 80. This document was prepared by EPA's Office of Air and Radiation, Office of Transportation and Air Quality, and Office of Enforcement and Compliance Assurance, Office of Regulatory Enforcement, Air Enforcement Division.

Regulated parties may use this document to aid in achieving compliance with the reformulated gasoline (RFG) and anti-dumping regulations. However, this document does not in any way alter the requirements of these regulations. While the answers provided in this document represent the Agency's interpretation and general plans for implementation of the regulations at this time, some of the responses may change as additional information becomes available or as the Agency further considers certain issues.

This guidance document does not establish or change legal rights or obligations. It does not establish binding rules or requirements and is not fully determinative of the issues addressed. Agency decisions in any particular case will be made applying the law and regulations on the basis of specific facts and actual action.

While we have attempted to include answers to all questions received, the necessity for policy decisions and/or resource constraints may have prevented the inclusion of certain questions. Questions not answered in this document will be answered in a subsequent document. Questions that merely require a justification of the regulations, or that have previously been answered or discussed either in a previous Question and Answer document or the Preamble to the regulations have been omitted.

OXYGENATES

Question: May small amounts of oxygenates other than ethanol be present in gasoline-ethanol blends that contain 10 volume percent ethanol, or gasoline blendstock that is blended with 10 volume percent ethanol?

Answer: Section 211(f) of the Clean Air Act prohibits fuel or fuel additives to be used in gasoline unless they are "substantially similar" to that used in the certification of motor vehicles or motor vehicle engines. EPA has determined that an additive is substantially similar if it contains only carbon, hydrogen, oxygen, nitrogen or sulfur at concentrations under 0.25 volume percent (see 46FR38582 (July 28, 1981)). EPA has also determined that conventional gasoline may contain up to 2.7 weight percent oxygen, regardless of the number of different allowable oxygenates in the gasoline (see 56FR5352 (February 11, 1991)). However, conventional gasoline may contain up to 3.5 weight percent oxygen if ethanol is the only oxygenate present in the gasoline (see 44FR20777 (March 29, 1979)). Gasoline which contains 10 volume percent ethanol, where ethanol is the only oxygenate in the gasoline, typically contains 3.5 weight percent oxygen.

EPA has historically allowed blends of conventional gasoline and ethanol containing 10 volume percent ethanol to also contain up to 2 volume percent MTBE (see letter to Ben Henneke, Jr., President, Energy Fuels Development Corporation from Richard D. Wilson, Director, Office of Mobile Sources, dated December 15, 1986). Gasoline which contains 2 volume percent MTBE, where MTBE is the only oxygenate in the gasoline, typically contains approximately 0.36 weight percent oxygen. EPA believes it is reasonable to allow conventional gasoline that contains 10 volume percent ethanol to also contain small amounts of oxygenates other than MTBE. However, if conventional gasoline contains both 10 volume percent ethanol and small amounts of any other oxygenates, the combination of all oxygenates other than ethanol may not increase the weight percent oxygen in the conventional gasoline by more than a total of 0.36 weight percent.

EPA has also historically allowed blends of reformulated blendstock for oxygenate blending (RBOB) and ethanol to contain up to 0.6 volume percent MTBE, ETBE, TAME or t-butanol, or 0.2 volume percent methanol (see Reformulated Gasoline and Antidumping Questions and Answers, October 3, 1994 and May 9, 1995). Gasoline which contains 0.6 volume percent MTBE, where MTBE is the only oxygenate in the gasoline, typically contains approximately 0.11 weight percent oxygen. EPA believes it is reasonable to allow blends of RBOB and ethanol to also contain small amounts of oxygenates other than MTBE, ETBE, TAME, t-butanol or methanol. However, if a blend of RBOB and ethanol contains small amounts of any oxygenates other than MTBE, ETBE, TAME, t-butanol or methanol, the combination of all oxygenates other than ethanol may not increase the weight percent oxygen in the RBOB-ethanol blend by more than a total of 0.11 weight percent.

TRANSMIX

Question: How will EPA determine if the endpoint of transmix-blended gasoline is in violation of the 437 degree maximum specified in EPA regulations?

Answer: Transmix blenders are refiners who produce gasoline by blending relatively small amounts (typically 0.25 volume percent) of transmix in gasoline. EPA has provided regulatory flexibility that allows transmix blenders to produce gasoline without having to meet all of the regulatory requirements for refiners, provided the endpoint of the transmix-blended gasoline does not exceed 437 degrees Fahrenheit (see 40 CFR 80.84). Blending transmix into gasoline increases the endpoint of the gasoline, and can potentially have a detrimental effect on emissions. In EPA's assessment of the effect of transmix blending on emissions, EPA determined that the effect of transmix blending on emissions would be negligible, provided the endpoint of the transmix-blended gasoline did not exceed 437 degrees F.

Transmix is a mixture of gasoline and distillate fuels that pipelines generate from their normal operations. Pipeline and terminal operators are able to blend transmix into gasoline to efficiently dispose of the transmix, because the endpoint of the gasoline prior to blending is typically less than the 437 degree F maximum specified in industry

standards and EPA's regulations. Transmix blending affects emissions because of the distillate fuel in the transmix. However, the amount of transmix that can be blended into gasoline is significantly limited by the percentage of distillate fuel in the transmix. Distillate fuels have much higher boiling points than gasoline, so transmix blenders must limit the addition of transmix so that the endpoint of the transmix-blended gasoline does not exceed 437 degrees F. Consequently, transmix which contains relatively high percentages of distillate fuel must be blended into gasoline at relatively low amounts so that the endpoint of the transmix-blended gasoline does not exceed 437 degrees F. Conversely, transmix which contains a relatively high percentage of gasoline could be blended into gasoline in relatively greater amounts without causing the endpoint of the transmix-blended gasoline to exceed 437 degrees F, since the transmix itself is already mostly composed of gasoline.

437 degrees F is the maximum allowable endpoint for gasoline specified in EPA's regulatory standard for automotive spark-ignition engine fuel, ASTM D 4814-88. Gasoline endpoint is measured using EPA regulatory method ASTM D 86-01, which measures the percentage of a gasoline sample that evaporates, as a function of temperature, as the sample is heated up under controlled conditions. Endpoint is the temperature at which all the volatile portion of a gasoline sample is evaporated. ASTM D 4814-88 specifies a maximum allowable endpoint of 437 degrees F in order to limit the amount of higher-boiling point compounds that can be present in gasoline.

ASTM D 86-01 also provides values for reproducibility, a measure of overall variability, of endpoint test results. Using the automated D 86-01 test method on gasoline with an RVP greater than 9.5 psi, the reproducibility for endpoint is 16 degrees F. Using the automated D 86-01 test method on gasoline with an RVP less than or equal to 9.5 psi, the reproducibility for endpoint is 18.9 degrees F. From discussions with refiners, EPA understands that in commercial practice, reproducibility is typically adjusted by a multiplier of 0.59, calculated from ASTM D 3244 Standard Practice for Utilization of Test Data to Determine Conformance with Specifications. Multiplying the above reproducibilities by 0.59 results in adjusted reproducibilities of 9.4 degrees F for gasoline with an RVP greater than 9.5 psi and 11.2 degrees F for gasoline with an RVP less than or equal to 9.5 psi.

EPA typically allows test tolerances for fuel downstream of the refinery gate, but does not allow any tolerances in test results for refiners. In the rulemaking that provided regulatory flexibility to transmix blenders, EPA did not provide any allowances for variability in endpoint tests. EPA is concerned that using the reproducibility in ASTM D 86-01, adjusted through ASTM D 3244, as a test tolerance would potentially result in transmix being blended into gasoline in greater-than-anticipated percentages, and could cause a non-negligible effect on emissions.

Although EPA believes the adjusted reproducibility is unacceptably large for EPA regulatory use, we do believe that some recognition of variability in endpoint testing is warranted. The RFG regulations at 80.65(e)(2)(i) provide allowances for differences in test results between a refiner or importer and an independent laboratory. For the 90%

distillation point (T90), the RFG regulations allow a difference in test results of up to 5 degrees F, as measured by ASTM D 86-01. Since gasoline endpoint and T90 measure very similar gasoline properties, EPA believes it is similarly appropriate to also allow a 5 degree F tolerance in test results for gasoline endpoint. Thus, EPA will consider transmix-blended gasoline to be compliant if an enforcement test result for gasoline endpoint is no more than 5 degrees greater than the 437 degree F maximum specified in the regulations.