EPA420-F-95-025
August 29, 1995

RFG Anti-Dumping Questions and Answers August 29,1995

Fuels and Energy Division
Office of Mobile Sources
U.S. Environmental Protection Agency

RFG/ANTI-DUMPING QUESTIONS AND ANSWER, AUGUST 29, 1995

The following are responses to most of the questions received by the Environmental Protection Agency (EPA) through July 25, 1995, 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 Mobile Sources, 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 by July 25, 1995, 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.

Topics Covered

SAMPLING AND TESTING

1. **Question**: The rules provide that the ASTM method D-1319-93 may be used for Aromatics until January 1, 1997, and that if used, the method must be correlated with the GC-MS test method. Is the correlation factor between the D-1319 test method for Aromatics and the GC-MS test method for Aromatics intended to be used for purposes of determining compliance?

Answer: Section 80.46(f)(3) states as follows:

(3) Alternative test method. (I) Prior to January 1, 1997, any refiner or importer may determine aromatics content using ASTM standard method D-1319-93, entitled "Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption," for purposes of meeting any testing requirement involving aromatics content; provided that

(ii) The refiner or importer test result is correlated with the method specified in paragraph (f)(1) of this section.

Thus, when ASTM method D-1319-93 is used to determine aromatics content, the result obtained must be correlated with the gas chromatography method specified in § 80.46(f)(1) in order to reflect the result which would have been obtained had the analysis been conducted using the gas chromatography method, and this adjusted result must be used for purposes of reporting and determining compliance with regulatory requirements.

RFG GENERAL REQUIREMENTS

[NOTE: The following is an update of the Answer to RFG General Requirements Question 4 from the April 18, 1995 Question and Answer document, to address the issue of allocation of baseline volume when a refinery is sold during the course of an averaging period.]

4. **Question:** In the case of a refinery which is sold during the course of an annual averaging period (i.e., other than at midnight on December 31), how does EPA view the responsibilities of the seller refiner and the buyer refiner with regard to meeting the RFG and anti-dumping standards for the gasoline produced at that refinery?

Answer: Under § 80.65(c), each refiner of RFG is responsible for meeting the RFG standards for each batch of RFG produced by that refiner, and under § 80.67(b) in the case of RFG the refiner designates for compliance on average the refiner must meet the applicable RFG standards separately for the RFG produced by that refiner at each refinery over each calendar year averaging period. Under § 80.101 each refiner of conventional gasoline is responsible for meeting the anti-dumping standards for all conventional gasoline produced by that refiner at each refinery over each calendar year averaging period. In addition, each refiner is responsible for meeting all other refiner requirements for the gasoline produced at each refinery (sampling and testing, record keeping, reporting, etc.) and under § 80.65(h) each refiner is responsible for the completion of a compliance audit for the gasoline produced at each refinery during each calendar year.

In the case of a refinery that is sold during an averaging period, therefore, both the seller refiner and the buyer refiner would independently be responsible for meeting the applicable RFG and anti-dumping standards for the RFG and conventional gasoline produced at that refinery during the period that party owns the refinery, and for meeting all other refiner requirements for the gasoline produced. For example, if a refinery is sold on April 1, 1996, the seller refiner would be responsible for meeting the RFG and anti-dumping standards for the RFG and conventional gasoline produced at the refinery during the period January 1, 1996 through March 31, 1996, and the buyer refiner would be responsible for meeting the RFG and anti-dumping standards for the RFG and conventional gasoline produced at the refinery during the period April 1, 1996 through December 31, 1996. Each refiner also would be responsible for meeting all other refiner requirements for their periods of ownership, including sampling and testing, independent sampling and testing, record keeping, reporting, and attest engagements. This responsibility to meet RFG standards would apply regardless of whether the RFG produced by one refiner or the other is designated for meeting standards on average or on a per-gallon basis. Moreover, each refiner could designate the RFG produced during the period that party owns the refinery as meeting the RFG standards on average or on a per-gallon basis, and the buyer refiner could make an aggregation election for the refinery under § 80.101(h).

For those standards and requirements that rely on the refinery's 1990 baseline volume, such as the compliance baseline for conventional gasoline under § 80.101(f)(4), the refinery's baseline volume would be allocated to the relative periods of time the seller refiner and the buyer refiner own the refinery. For example, if a refinery with a baseline volume of 500 million gallons is sold on April 1, the seller refiner would receive a baseline volume of 123.29 million gallons ({90/365}*500 million), and the buyer refiner of 376.71 million gallons ({275/365}*500 million).

EPA recognizes there are seasonal differences in some RFG and anti-dumping standards calculations (e.g., the different toxics equations for summer versus winter) which, depending upon when a refinery is sold, could have an impact on either the seller or buyer refiner meeting these standards when met on average. As a result, in a case where a refinery is sold during an averaging period, and where either the seller or buyer refiner fails to meet an RFG or conventional gasoline standard which is met on average, EPA will evaluate the gasoline produced at the refinery by both the seller and the buyer refiner together. If this evaluation shows that the applicable RFG and conventional gasoline average standards have been met for all the gasoline produced at the refinery during the averaging period, EPA will treat both refiners as having met these standards, regardless of the separate compliance calculations of these parties. This collective evaluation would not be appropriate and would not be conducted, however, in a case where the standard in question is one that may be met by aggregating refineries (i.e., all anti-dumping standards, and in the case of RFG under the simple model, sulfur, T-90 and olefins) and where the refiner who failed to meet the standard has elected to aggregate the refinery in question with other refineries.

EPA believes that the considerations discussed in this answer should be taken into account when a refiner enters into a transaction to sell or buy a refinery, particularly to the extent a refiner would intend to rely on the collective evaluation approach. For example, a refiner who sells a refinery in April and who is counting on summer gasoline to meet RFG or conventional gasoline toxics standards should ensure that the buyer refiner will produce gasoline of sufficient quality that the toxics standards are met for the refinery overall for the calendar year averaging period.

DOWNSTREAM OXYGENATE BLENDING

[NOTE: This is a modification of Question 2 of the Downstream Oxygenate Blending section of the January 9, 1995 Question and Answer Document, which was modified on August 15, 1995, to provide additional guidance regarding quality assurance sampling and testing for blenders who elect to meet the RFG oxygenate standard on average. The following modification provides guidance on how batches may be reported in accordance with the prior guidances.]

2. **Question:** In the case of RFG oxygenate blenders who splash blend oxygenate in trucks and who wish to meet the oxygen standard on average, what options are available for establishing the oxygen content of the RFG produced? Specifically, is there any option other than every-batch sampling and testing, which would require sampling and testing every truck (or every truck compartment) for a truck splash blending operation?

Answer: Under § 80.69(b)(4), an RFG oxygenate blender who meets the oxygen standard on average is required to sample and test each batch of RFG produced to determine the batch's oxygen content, and assign a number to the batch for reporting purposes. This every-batch sampling and testing requirement applies regardless of whether the oxygenate blending is carried out in a large terminal tank or through splash blending in trucks.

EPA agrees that every-batch sampling and testing by an oxygenate splash blender would be difficult. As a result, an oxygenate blender may meet the oxygen standard on average without conducting every-batch sampling and testing provided the oxygenate blender meets the following requirements:

1. Computer-controlled oxygenate blending required. The oxygenate blending must be carried out using computer-controlled in-line or sequential blending, that operates in such a manner that the volumes of oxygenate and RBOB are automatically dispensed when a particular grade of gasoline is selected for loading into a truck, and no operator instructions are required regarding the oxygenate-RBOB proportions when an individual truck is loaded. Thus, this alternative averaging approach would not be available where the oxygenate and RBOB are

separately metered into a truck, regardless of whether the separate metering occurs at the same terminal or at different terminals.

2. Oxygenate blender must operate blending equipment. The oxygenate blender must be the party who operates the computer-controlled in-line or sequential blending equipment. Thus, this alternative averaging approach would not be available to a party who receives delivery of splash blended RFG into trucks at a terminal if the terminal is not operated by that party, regardless of whether the receiving party is a registered oxygenate blender.

3. Reporting and compliance calculations. The oxygenate blender may base its batch reports and compliance calculations on the volumes and properties of RBOB and oxygenate used during a period not longer than one calendar month. Values must be derived separately for each designation of gasoline (OPRG/VOC, OPRG/non-VOC, non-OPRG/VOC, non-OPRG/non-VOC) at each blending facility. Grade need not be specified for those batches. In calculating the oxygen content of the RFG produced, the oxygenate blender may use assumptions regarding the specific gravities of the oxygenate and RBOB blended, or in the alternative the oxygenate blender may use the measured specific gravities of all oxygenate and RBOB blended in the blending operation. Similarly with regard to the denaturant content of the ethanol (if used), an oxygenate blender may assume the denaturant content is 5 vol% of the ethanol used provided the blender obtains documents from the ethanol supplier which support this assumption and provided the quality assurance sampling and testing (described below) supports this assumption, or in the alternative the denaturant content of ethanol may be measured.

During each oxygen averaging period, however, an oxygenate blender must use only the assumed specific gravities or only the measured specific gravities for all compliance calculations for an oxygenate blending facility. Similarly, during each oxygen averaging period an oxygenate blender must use only the assumed denaturant content of ethanol (if used) or only the measured denaturant content for all compliance calculations for an oxygenate blending facility.

a. The wt% oxygen which may be claimed is calculated using the following equation:

$$\text{ygen} = \left(\frac{(V_{oxygenate} \times d_{oxygenate} \times F_{oxygenate})}{(V_{RBOB} \times d_{RBOB}) + (V_{oxygenate} \times d_{oxygenate})} \right)$$

Where

$W\%_{oxygen}$	=	weight percent oxygen in final blend
$V_{oxygenate}$	=	volume of oxygenate used, exclusive of denaturant
V_{RBOB}	=	volume of RBOB and denaturant used
$d_{oxygenate}$	=	specific gravity of denatured oxygenate used
d_{RBOB}	=	specific gravity of RBOB used
$F_{oxygenate}$	=	oxygen weight fraction for the oxygenate (0.3473 for ethanol; 0.1815 for MTBE)

b. In the case of an oxygenate blender who is calculating oxygen content using the assumptions for specific gravity, the following values must be used:

RBOB specific gravity	-	0.7420
denatured ethanol specific gravity	-	0.7939
MTBE specific gravity	-	0.7460

c. An oxygenate blender using the measured specific gravity option must determine, through sampling and testing, the specific gravity for each batch of oxygenate and RBOB used to produce RFG.

d. An oxygenate blender using the measured oxygenate purity option must determine, through sampling and testing, the purity for each batch of oxygenate used to produce RFG.

4. Quality assurance sampling and testing.

a. An oxygenate blender who meets the oxygen standard on average using the procedures described in this answer must conduct a program of quality assurance sampling and testing the RFG produced, using the procedures and at the frequencies specified under § 80.69(e)(2).

b. An oxygenate blender who assumes ethanol has a denaturant content of 5% must conduct a program of quality assurance sampling the ethanol used. The frequency of this sampling and testing must be at least one sample every month. In the event an ethanol sample from this quality assurance program has an oxygenate purity level of less than 92.1%, the oxygenate blender must: 1) use the greater denaturant content for all oxygen compliance calculations for the ethanol that was tested, and; 2) increase the frequency of quality assurance sampling and testing to one sample every two weeks, and must maintain this frequency until four successive samples show an ethanol purity content that is equal to or greater than 92.1%. The formula for calculating denaturant content based upon ethanol purity is 100 volume % fuel ethanol - 0.99 volume % water - (oxygenate purity / 98% purity). For example, if a quality assurance test yielded an oxygenate purity level of 90%, the denaturant content used in the compliance calculations will be calculated as 99.01 vol % - (90/.98), or 7.17 volume % denaturant.

5. <u>Attest procedures.</u>

An oxygenate blender who meets the oxygen standard on average using the procedures described in this answer must commission an independent review of the oxygenate blending operation using persons with the qualifications specified in § 80.125. The agreed upon procedures for the independent review should follow the requirements specified in §§ 80.129(a) through (c). In addition, the attester should complete the following attest steps:

a. Obtain a listing of all oxygenate receipts for the previous year, test the mathematical accuracy of the volumetric calculations contained in the listing, and agree the volumetric calculations of the oxygenate receipts to the calculations contained in the material balance analysis.

b. Obtain a listing of the monthly (or lesser period if used by the oxygenate blender) oxygen compliance calculations, test the mathematical accuracy of the listing, and agree the volumetric calculations to the material balance analysis. Select a representative sample of the oxygen compliance calculations, and determine whether the oxygenate blender is basing its calculations on the assumptions for specific gravity and the denaturant content (if ethanol is used), or on the assumed values. If the oxygenate blender is using measured values, obtain the oxygenate blender's test results for specific gravity and denaturant content for the RBOB and oxygenate used, and agree these test results to the compliance calculations. If the oxygenate blender is using the assumed values, agree the specific gravity and denaturant content used in the compliance calculations with the values specified in this procedure.

c. Agree the sampling and testing frequency of the oxygenate blender's quality assurance program with the sampling and testing rates required by this procedure.

6. Record retention.

The oxygenate blender must meet the record keeping requirements that are specified under §§ 80.74(a), (c), and (d), and in addition must meet the record keeping requirements specified under § 80.74(a) for any oxygenate sampling and testing that is performed.

In addition to the alternative averaging approach described above, EPA would be willing to consider other alternative approaches that ensure the integrity of the averaging program.

1. **Question**: Would it be permissible to combine (i.e., commingle) any-oxygenate RBOB with an RBOB designated for blending with 10 vol% denatured ethanol, provided the new RBOB (resulting from the combination) is designated for blending with 10% denatured ethanol?

Answer: Section 80.78(a)(7) provides that "no person may combine any reformulated gasoline blendstock for oxygenate blending with any other gasoline, blendstock, or oxygenate...," and § 80.78(a)(7)(ii), states that an RBOB may be combined with "other RBOB for which the same oxygenate type and amount (or range of amounts) was specified by the refiner or importer." In addition, guidance was provided in the April 18, 1995 Question and Answer document that parties may consider the oxygenate amount specified for RBOB to be a minimum specification, and oxygenate may be added in excess of that minimum up to the applicable oxygen maximum or substantially similar maximum.

As a result, a party could combine RBOB's that have different requirements for oxygenate amount (but not different oxygenate types), provided that the mixture is designated for oxygen blending with the largest oxygen amount specified for any of the RBOBs in the mixture. For example, a party could combine any-oxygenate RBOB with RBOB designated for blending with 10 vol% denatured ethanol, as described in the question, provided that the mixture is designated for blending with 10 vol% ethanol.

2. **Question:** Does section 80.69(e) apply to operations where RBOB is received into a terminal tank from a pipeline or barge and is subsequently blended with oxygenate in a truck?

Answer: The regulatory provision at § 80.69(e) applies to situations where RBOB is blended with oxygenate at a terminal other than in a terminal storage tank (which is addressed in § 80.69(c)). The requirements of § 80.69(e) would apply where RBOB and oxygenate are loaded onto a gasoline delivery truck at the same time. This would be the case where the RBOB and oxygenate are loaded sequentially into a truck at the loading rack, as well as where RBOB and oxygenate are combined in a mixing header that is located between the RBOB storage tank and the truck loading rack.

REGISTRATION, REPORTING, RECORDKEEPING

1. **Question:** How do I report previously-certified gasoline that was combined with blendstock to produce a new batch of gasoline.

Answer: For purposes of compliance with the requirements of section 80.75(a), the following method for reporting previously certified gasoline used to produce a new batch of gasoline will apply. The following method applies whether compliance is on average or per gallon. A modified version of the batch report form (EPA Form 3520F) is available (contact Angela Young, 202-233-9038 or Michael Marmen, 202-233-9038) for the reporting of batches containing previously-certified gasoline. Reporting of these batches can only be done via the paper forms - EDI reporting using this method would require changes to the data mapping. (At this time EPA will not release a revised mapping, but may do so at a later date.)

For each batch containing previously-certified gasoline, three batch reports should be filed with EPA - one describing the previously-certified batch, another describing the final batch (previously-certified gasoline and blendstock) and a third describing the calculated properties of the batch after "backing out" the volume and properties of previously-certified gasoline. The final and calculated batch reports should share the same batch number. The batch number for the previously-certified gasoline **should be unique**. EPA Form 3520F, "Reformulated Gasoline and Anti-Dumping Report for Batches containing Previously-Certified Gasoline" is identical to form 3520C "Reformulated Gasoline and Anti-Dumping Batch Report" with the following exceptions: 1) There is no field to identify the reporting party 2) There is an additional field, "1.2) Batch Type", that identifies which type of batch the report describes ["Previously-Certified", "Blended (Final)" or "Calculated"]. 3) There is an additional field , "2.5) Previously-Certified Batch No.", that is used to link final and calculated batches to the previously-certified gasoline that was used in their production. 4) There are bubbles next to fields in section "8.0) Gasoline Properties" for indicating negative values (a possibility in the calculated batch report.)

Independent laboratories should collect two different gasoline samples in this situation: a sample of the previously-certified gasoline and a sample of the final batch. If the independent laboratory is required to analyze and report on the batch, both of these samples should be analyzed and reported to EPA using form 3520C. The independent laboratory is not expected to calculate or report the properties of blending components used.

In the "Calculated batch" report, the properties of blending components added to the previously-certified gasoline will be calculated using the methods described below. For properties being met on a per-gallon basis, the calculated value will be compared to the appropriate per-gallon standard. For compliance on average, the properties will be similarly checked to ensure that they meet appropriate standards. Facilities reporting batches with properties that don’t fall within the appropriate standards will be notified. Note: If any of the final batch is left in tank after shipment, that "heel" should be measured for volume and reported as previously-certified gasoline (with a new batch number) for the next batch.

For emissions performance calculations, negative gasoline property values should be adjusted to the lowest value in the range limit for that property under the simple or complex model.

The following method will be used to calculate the volume and properties of the batch produced:

1) Volume produced should be the volume in tank after the batch was added minus the volume of previously-certified gasoline in tank before the batch was added.

2) For all parameters determined on a volume percent basis (and T-90) the following equation should be used:

$param_{produced}=(V_{end}*param_{end}-V_{pre}*param_{pre})/(V_{end}-V_{pre})$

Where:

$param_{produced}$ =	Reported value for the parameter under consideration for the batch produced
$param_{end}$ =	Analyzed value for the parameter under consideration for the tank after the refiner's blendstock has been added
$param_{pre}$ =	Analyzed value for the parameter under consideration for the tank before the refiner's blendstock has been added (the previously-certified gasoline)
V_{end} =	The volume of product in tank after the blendstock has been added
V_{pre} =	The volume of product in tank before the blendstock was added (volume of previously-certified gasoline in tank before blendstock was added)

3) For parameters determined on a weight percent or PPM basis, the following equation should be used:

$param_{produced} = (V_{end}*SG_{end}*param_{end}-V_{pre}*SG_{pre}*param_{pre})/(V_{end}*SG_{end}-V_{pre}*SG_{pre})$

Where:

SG_{end} =	Specific Gravity of the product in tank after the blendstock was added.
SG_{pre} =	Specific Gravity of the product in tank before the blendstock was added (Specific gravity of the previously-certified gasoline)

4) Specific gravity of the batch produced should be:

$SG_{produced} = (V_{end}*SG_{end}-V_{pre}*SG_{pre})/(V_{end}-V_{pre})$

which can be easily converted to API gravity.

5) The following method will be used for determining the toxics reductions of the produced batch under the simple model:

Put the calculated parameters for RVP, oxygenate content, aromatics, and benzene into the simple model toxics equation to determine the toxics reduction of the batch produced. Again, if a parameter value is less than zero, use the lowest value in the range of allowable values for the model.

<u>Examples of Calculations(all examples are simple model reformulated gasoline)</u>

1) The oxygen weight percentage of a 6,000,000 gallon batch of previously certified gasoline was 2.14 (0.7377 specific gravity) . After 3,500,000 gallons of blendstock were added to produce a final batch, the oxygen weight percentage is 2.24 (0.7362 specific gravity). Using the method for weight percent:

a) (9,500,000*0.7362*2.24-6,000,000*0.7377*2.14)/(9,500,000*0.7362-6,000,000*0.7377)

b) (15,666,336 - 9,472,068) / (6,993,900 - 4,426,200)

c) 6,194,268 / 2,567,700 = 2.41 Oxygen weight percentage (after backing out volume of previously-certified gasoline)

2) Using the same batch volumes, the volume percentage of benzene was 50 in the batch of previously-certified gasoline, 64 in the final batch. Using the method for volume percent:

a) (9,500,000*0.64-6,000,000*0.50)/(9,500,000-6,000,000)

b) (6,080,000-3,000,000)/3,500,000

c) 3,080,000/3,500,000 = 88 Benzene volume percentage (after backing out volume of previously-certified gasoline)

3) The aromatics volume percentage is 23.5 for a 9,000,000 gallon batch of previously-certified gasoline. After blendstock is added, the final batch is 9,500,000 gallons with an aromatics volume percentage of 22. Again using the method for volume percent:

a) (9,500,000*22-9,000,000*23.5)/(9,500,000-9,000,000)

b) (209,000,000-211,500,000)/500,000

c) -2,500,000/500,000= -5 Aromatics volume percentage (after backing out volume of previously-certified gasoline)

Note that in this example the calculated aromatics content is a **negative** number. When used in emissions performance calculations, this value would have to be adjusted to the lowest value in the range limit for aromatics content under the applicable model. In this case for the simple model, the value would have to be adjusted to zero (0 volume percent).