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RFG Anti-Dumping Questions and Answers August 15, 1995

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

RFG/ANTI-DUMPING QUESTIONS AND ANSWER, AUGUST 15, 1995

The following are responses to most of the questions received by the Environmental Protection Agency (EPA) through July 18, 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 18, 1994, 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

RFG GENERAL REQUIREMENTS

1. **Question:** Can EPA provide a range for total oxygen content for use under § 80.65(e)(2)(i)?

Answer: Section 80.65(e)(2)(i) provides a table with ranges for fuel properties to be used in comparing the refiner's or importer's test results to the test results obtained from the independent laboratory. Although a range for total oxygen content is not included in this table, a range of 0.1 wt% may be applied for total oxygen under § 80.65(e)(2)(i). This range for weight % oxygen would be in addition to, and not instead of, the ranges listed in § 80.65(e)(2)(i). For example, if an oxygen volume % was outside the range, the provisions of § 80.65(e)(2)(ii) would apply, even if the weight % was within the 0.1% range. EPA will address this in an appropriate rulemaking.

IN-LINE BLENDING

[NOTE: The following revises the In-Line Blending Question appearing in the May 23, 1995 Question and Answer document to correct a typographical error. The last sentence made reference to § 80.125(a) and/or (b) instead of § 80.125(a) and/or (d).

1. **Question:** For a refinery with an in-line gasoline blending exemption, can the annual in-line blending audit be conducted by the same attestation auditor as outlined under Subpart F of the RFG and Anti-dumping regulations? Must the auditor for an in-line blending operation meet the requirements for Attest Engagements at § 80.125?

Answer: An in-line blending exemption exempts a refiner from the independent sampling and testing requirements of § 80.65(f). As one of the conditions of the exemption, the refiner must carry out an independent audit program of its in-line blending operation.

Attestation engagements are different than, and do not take the place of, the in-line blending audits. Attestation engagements cover a broad range of records required under the reformulated gasoline and anti-dumping programs, as specified in Subpart F. They deal with production volumes, fuel properties reported for those volumes, and shipment documentation. The independent audits required for in-line blending operations, on the other hand, are narrowly focused on individual in-line blending systems that are unique for each location. Basically, the in-line blending audit must verify that for each batch, the reported batch properties are supported by secondary sources of test data; that in-line blending control and recordkeeping systems are being carried out as represented to the Agency in the petition for the exemption; and that the testing, cross checks and quality control being exercised over the operation allow the refiners to accurately predict the property values and volumes being reported for each batch.

Auditors who conduct in-line blending audits must meet the criteria specified in § 80.125(a) and/or (d), which require the auditor to be an independent certified public accountant, or, alternatively, an employee of the refiner, provided that such employee is an internal auditor certified by the Institute of Internal Auditors, Inc. ("CIA") and completes the internal audits in accordance with the Codification of Standards for the Professional Practice of Internal Auditing. However, because of the complexity of on-line measurements and estimates, many auditors who qualify for the attestation engagements may not have the technical qualifications to conduct in-line blending audits. The audit program for an in-line blending operation will require the refiner to use an auditor who both fulfills the requirements under § 80.125(a) and/or (d), and has expertise with in-line blending operations.

DOWNSTREAM OXYGENATE BLENDING

[NOTE: The following revises Question 2 of the Downstream Oxygenate Blending section of the January 9, 1995 Question and Answer document. This revision modifies two aspects of the requirements outlined in the January 9, 1995 answer on quality assurance sampling and testing for downstream oxygenate blenders who elect to meet the RFG oxygenate standard on average. First, in determining the level of testing required for quality assurance, EPA believes that ethanol purity is a more practical, and, therefore, more appropriate measure of ethanol quality than denaturant content. In the absence of evidence to the contrary, EPA believes it is reasonable to rely on the ASTM allowances in determining compliance with program requirements. Therefore, blenders will be required to sample at a higher rate if the ethanol purity of a sample falls below 92.1%.[1] Second, to alleviate the burden on blenders due to the required frequency of sampling, EPA believes that it is appropriate to eliminate the per barrel component of the sampling and testing requirements. Therefore, blenders are required to conduct at least one sample per month, or one sample every two weeks if the minimum level of ethanol purity is not met.]

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.

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[1] ASTM D 4806-94 allows for up to 5 volume % denaturant, 1.25 mass % water and 2.0% volume impurities for denatured fuel ethanol. Therefore, the minimum level of ethanol purity would be calculated as (100 volume % fuel ethanol - 5 volume % denaturant - 0.99 volume % water) x 98% purity, or 92.1%.

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. Compliance calculations. The oxygenate blender may base its compliance calculations on the volumes and properties of RBOB and oxygenate used during a period not longer than one calendar month. 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:

$$W\%_{oxygen} = \left(\frac{(V_{oxygenate} \times d_{oxygenate} \times F_{oxygenate})}{(V_{RBOB} \times d_{RBOB}) + (V_{oxygenate} \times d_{oxygenate})} \right) X\ 100$$

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 calclated as 99.01 vol % - (90/.98), or 7.17 volume % denaturant.

5. Attest procedures.

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:** Please clarify how the batch properties and volume are determined for a batch of RBOB. Should the volume of oxygenate specified by the refiner to be blended with a batch of RBOB downstream be included in the batch volume reported for the RBOB?

Answer: Yes. Section 80.69(a)(2) requires the refiner to analyze an actual blend of a representative sample of the RBOB and oxygenate using the regulatory methods to determine the properties and characteristics of the resulting RFG. The RBOB is certified based on these results. The batch volume reported for the RBOB is the amount of RBOB plus the amount of oxygenate that the refiner designates must be blended downstream. This amount must be based on the analysis of the representative sample of RBOB and oxygenate. Where § 80.69(a)(8) is applicable (i.e., in lieu of the contractual and quality assurance requirements specified in §§ 80.69(a)(6) and (7), and where the refiner designates RBOB as "any oxygenate" or "ether only"), the refiner must assume that the volume of oxygenate added downstream will be such that the resulting RFG will have an oxygen content of 2.0 weight percent. Where § 80.69(9) is applicable (i.e., in lieu of the contractual and quality assurance requirements specified in §§ 80.69(a)(6) and (7), and where the refiner does not designate the RBOB as "any oxygenate" or "ether only"), the refiner must assume that the volume of oxygenate added to the RBOB downstream is 4.0 volume percent ethanol.

The batch volume, i.e., the volume of RFG that will result after oxygenate is blended with RBOB downstream, can be calculated using the following formula:

$$V_t = V_g + \left(\frac{R V_g}{1 - R} \right)$$

Where:

V_t	=	Volume of RFG that will result after oxygenate is blended with RBOB.
R	=	Portion of RFG that is denatured oxygenate, expressed as a decimal.
V_g	=	Volume of RBOB.

For example, if a refiner has a 50,000 barrel batch of RBOB, and the refiner designates, based on the analysis of the representative sample, that the resulting RFG must contain 10.0 vol% denatured ethanol, the refiner would mathematically determine the amount of ethanol needed for the batch of resulting RFG to have 10.0 vol% ethanol, and add that amount to the 50,000 barrels of RBOB. In this example, the amount of RFG would be:

$$V_t = 50{,}000 + \left(\frac{0.1 * 50{,}000}{1 - 0.1} \right)$$

$$= 55{,}556$$

Where § 80.69(a)(8) is applicable, the RBOB refiner will have to calculate how much volume of oxygenate is required to result in the RFG batch having a 2.0 weight percent oxygenate. This volume of oxygenate can be calculated using the following formula:

$$V_{oxygenate} = \frac{W\%_{oxygen} \times V_{RBOB} \times d_{RBOB}}{d_{oxygenate} \times ((100 \times F_{oxygenate}) - W\%_{oxygen})}$$

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)

For example, where a refiner has a 50,000 barrel batch of "any oxygenate" RBOB (including denaturant), and assumes a specific gravity of 0.7420 for the RBOB and a specific gravity of 0.7939 for the denatured ethanol, the amount of the batch would be:

$$V_{oxygenate} = \frac{2 * 50{,}000 * 0.7420}{0.7938 * ((100 * 0.3473) - 2)}$$

$$= 2{,}856$$

$$V_{total} = 50{,}000 + 2{,}856$$

$$= 52{,}856$$

REGISTRATION, REPORTING, RECORDKEEPING

1. **Question:** The batch report requires reporting the volume percent for six oxygenates -- methanol, MTBE, ethanol, ETBE, TAME and t-butanol. If a refiner or oxygenate blender uses MTBE or ethanol as an oxygenate, and does not include in its calculation of oxygen weight percent any other oxygenates that may be present in the MTBE or ethanol, is it necessary to include the volume percent of those other oxygenates on the batch report form?

Answer: Trace amounts of oxygenates that may be present in MTBE or ethanol do not have to be reported. However, where a refiner reports total oxygen weight percent that includes MTBE or ethanol plus other oxygenates in larger than trace amounts, the volume percent of each of the other oxygenate should be included on the batch report.

2. **Question:** Please clarify what the transaction set control number and report number on the batch report and other EDI maps are. Please detail their specific uses, especially with respect to resubmission of reports. Are these numbers unique on a company or facility basis?

Answer: The transaction set control number (ST02) is a serial or sequential number representing the transmission sequence to EPA. The report number (BTR05) is the sender's own tracking system number which refers the sender back to his own original record.

A previous BTR05 should be inserted to BTR06 when the report is a resubmission; i.e., when BTR01 = 15.

These numbers need not be unique on a company or facility basis.

3. **Question:** On the batch report map, there is an extra asterisk on the end of line 140 of table 1. Is this a mistake?

Answer: The extra asterisk on the end of line 140 has been corrected in the revised edition of the report.