



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 27 2012

OFFICE OF
AIR AND RADIATION

The Honorable F. James Sensenbrenner, Jr.
U.S. House of Representatives
Washington, D.C. 20515-4905

Dear Vice-Chairman Sensenbrenner:

Thank you for your May 17, 2012, letter expressing concerns about the potential use of gasoline-ethanol blended fuels containing more than 10 volume percent and up to 15 volume percent ethanol (E15). In your letter you request that we delay further registration of E15 and you ask us to answer specific questions related to a recently released study conducted by the Coordinating Research Council and about misfueling. The Administrator has asked me to respond to your letter.

Please find responses to your specific questions concerning E15 misfueling and the CRC Engine Durability Studies in the enclosure to this letter.

In addition to answering your questions, it is important to address some of the other issues and concerns you raise in your letter. Your letter suggests that businesses are mandated to sell E15 and that the Environmental Protection Agency recommends the use of E15. As was stated in the E15 Misfueling Mitigation Rule, the E15 Waiver Decisions allow but do not require anyone to manufacture or use E15. The EPA executed its statutory obligations under the Clean Air Act in considering the E15 waiver request and the registration of ethanol for use in the manufacture of E15, but it is up to businesses to decide whether and how to produce and sell E15 for MY2001 and newer light-duty motor vehicles.

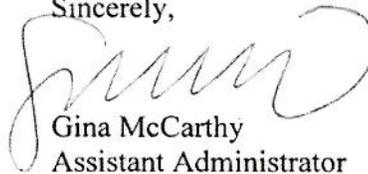
Your letter also notes that there are outstanding questions about the compatibility of existing fuel dispensers and underground storage tanks (USTs) with E15. Since the agency regulates the compatibility of USTs with liquid fuels, the EPA has issued guidance on how retail stations can demonstrate UST compatibility with E15 to comply with federal underground storage tank requirements. For other applicable fuel requirements, the EPA has repeatedly emphasized the need for companies that wish to make or sell E15 to meet all applicable federal, state, and local requirements prior to introducing E15 into commerce. Companies should consider the costs of complying with appropriate federal, state, and local requirements before deciding whether to introduce E15 into commerce.

In your letter, you request that the EPA delay further registration of E15 until after a comprehensive study by the National Academy of Sciences on the testing of E15 has been conducted. Section 211(b) of the Clean Air Act requires fuel and fuel additive manufacturers to register designated motor fuels and fuel additives. In order for a fuel or fuel additive to be registered, a fuel or fuel additive manufacturer must provide the agency with appropriate company specific information and information concerning emissions speciation and potential health effects. Section 211(b)(3) requires the EPA to register fuel and fuel additives after companies have submitted appropriate company specific information and complied with health effects testing requirements. As we noted in a letter to the Renewable Fuels Association and Growth Energy dated February 17, 2012, data and analyses sufficient to satisfy the emissions and health

effects testing requirements under the Clean Air Act and EPA regulations were provided by the Renewable Fuels Association and Growth Energy to the agency so that individual fuel and fuel additive manufacturers could use that information to register E15 or ethanol for use in the manufacture of E15. As of June 15, 2012, the EPA has registered over 60 manufacturers of ethanol for use in E15 in accordance with the statutory and regulatory requirements.

Again, thank you for your letter. If you have further questions, please contact me or your staff may call Cheryl Mackay in EPA's Office of Congressional and Intergovernmental Relations at 202-564-2023.

Sincerely,

A handwritten signature in black ink, appearing to read "Gina McCarthy", written in a cursive style.

Gina McCarthy
Assistant Administrator

Enclosure

**Response to E15 Questions to the Administrator from the Honorable F. James Sensenbrenner, Jr.
in Letter Dated May 17, 2012**

1. In response to my previous inquiry, you expressed confidence that E15 would not damage engines and cited DOE testing and CRC reports as support. In light of the new CRC study, does the EPA remain confident that E15 will not damage car engines from vehicles models years of 2001 and later?

The EPA remains confident in the technical basis for the E15 partial waiver decisions. As the agency indicated in the October partial waiver decision, the EPA was aware of the Coordinating Research Council (CRC) Engine Durability Study¹ and believes that the CRC Engine Durability Study suffers from a number of design issues that undermine the validity of the program's results.² (These design issues are more thoroughly discussed below in response to Question 2.) The EPA also determined that it had sufficient data to rule on the waiver request without the CRC Engine Durability Study. The EPA considered all available information relating to E15's potential impact on vehicle and engine emission controls, and the E15 Partial Waiver Decisions relied on over 30 vehicle studies conducted by industry including CRC, academia, and government.

The Department of Energy (DOE) Catalyst Durability Study, which the EPA relied on extensively to support its E15 Partial Waiver Decisions, is one of the largest, most comprehensive vehicle test programs ever conducted. The DOE Catalyst Durability Study tested 86 vehicles (27 vehicle models) aged up to 120,000 miles on E0, E10, E15, and E20. DOE examined the effects of E15 on emissions controls over the regulatory full useful lives of these vehicles and concluded that "aging with ethanol blends did not affect emissions changes over time differently than aging with ethanol-free gasoline."³ In light of this extensive body of scientific literature and data and the severe design flaws of the CRC Engine Durability Study, the EPA remains confident in the technical basis for the E15 Partial Waiver Decisions that allow E15 to be introduced into commerce for use in MY2001 and newer cars, light-duty trucks, and SUVs.

2. Does the EPA believe the recent CRC study raises questions sufficient to justify additional testing of E15 before it is approved for commerce? If not, please provide the rationale behind excluding this study from consideration.

The EPA does not believe that the recent CRC study raises questions sufficient to justify additional testing of E15 before it is approved for introduction into commerce under Clean Air Act requirements. As indicated above, the data and information available at the time the EPA granted the partial waiver decisions was sufficient to grant a waiver for E15 use in MY 2001 and newer light-duty motor vehicles. The EPA was aware of the CRC Engine Durability Study when it rendered the E15 Partial Waiver Decisions and the EPA believes that several design flaws of the CRC Engine Durability Study undermine the utility of the CRC Engine Durability Study.

For example, CRC did not establish a proper control group for the study. Although CRC tested eight vehicle models on E20, they only tested three vehicles on ethanol free gasoline (E0), one of which failed CRC's criteria. Additionally, the test criteria used to determine whether a vehicle "passed" are arbitrary.

¹ *Intermediate-level Ethanol Blends Engine Durability Study* (CRC Project: CM-136-09-1B), April 2012 ("CRC Engine Durability Study") available at <http://www.crcao.org/reports/recentstudies2012/CM-136-09-1B%20Engine%20Durability/CRC%20CM-136-09-1B%20Final%20Report.pdf>.

² See 75 FR 68109 (November 4, 2010).

³ West, Brian H et al. *Intermediate Ethanol Blends Catalyst Durability Program*. ORNL/TM-2011/234, February 2012, available at <http://info.ornl.gov/sites/publications/files/Pub31271.pdf>.

In particular, CRC used a criterion that specified that a measurement of greater than 10 percent engine leakdown represented a “mechanical failure.” This leakdown requirement is not recognized in the public domain as a standard failure criteria and the CRC report offers no explanation of how a slightly elevated leakdown measurement would impact vehicle performance or emissions. A recently peer-reviewed journal article published by DOE contractors further brings into question the utility of using engine leakdown as a criterion for evaluating vehicle engine or emissions performance.⁴ The article highlights DOE testing which shows that engine leakdown has no correlation to engine or emissions performance.

Other problems with the program include testing of vehicles with known issues even when operating on E10, which was not tested; the program tested vehicles with unknown maintenance histories making it difficult to determine whether effects were due to testing or some external factor; and the test cycle used to age the vehicles was a non-standard test designed to be worst case that does not approximate how vehicles are operated in-use. DOE has explained these issues in more detail and has outlined other criticisms of the CRC Engine Durability Study stating that this “severely limits the utility of the study.”⁵

3. With the mass introduction of any new fuel into the marketplace, misfueling will inevitably occur. Did the EPA assess how much misfueling is likely to occur under its mitigation policy and how much damage is likely to result?

The EPA disagrees that E15 will be introduced on a massive scale resulting in “inevitable misfueling.” Despite the EPA recently having acted on each of the Clean Air Act steps required to bring E15 to market, there is significant uncertainty about where, when and how E15 will enter the market. Other steps must be taken to address additional federal, state and local requirements, including, as you mentioned in your letter, determining the compatibility of fuel storage and dispensing equipment under various federal, state and local regulations. Given the potential challenges that E15 faces in order to enter the market, there is a great amount of uncertainty concerning when, where, and to what extent E15 may be introduced into the marketplace.

As was discussed in detail in the E15 Misfueling Mitigation Rule⁶, EPA drew on its successful program for transitioning the diesel market from low to ultra-low sulfur diesel (ULSD) fuel to design a robust misfueling mitigation program for E15. Specifically, the rule makes it illegal for anyone to use or cause the use of gasoline containing more than 10 vol% ethanol in vehicles, engines and equipment not covered by the E15 Partial Waiver Decisions. The final rule also requires all E15 gasoline fuel dispensers to have a specific label when a retail station or wholesale-purchaser consumer chooses to sell E15. In addition, the rule requires that product transfer documents (PTDs) specifying ethanol content and Reid Vapor Pressure (RVP) accompany the transfer of gasoline blended with ethanol through the fuel distribution system, and a survey of retail stations to ensure compliance with E15 labeling, ethanol content and other requirements.

The EPA believes that the misfueling measures in the E15 Partial Waiver Decisions and E15 Misfueling Mitigation Rule will work together so that fuel providers have a strong incentive to properly blend and label E15 and consumers have a strong incentive to avoid misfueling. The current industry-led public outreach campaign also reinforces how and why it is important to avoid misfueling. The EPA believes

⁴ Sluder, C. Scott and Brian H. West. “Limitations and Recommended Practice In the Use of Compression and Leak-Down Tests to Monitor Gradual Engine Degradation,” *SAE International Journal of Engines*, December 2011, pp. 2767-2777.

⁵ Davis, Patrick. “Getting It Right: Accurate Testing and Assessments Critical to Deploying the Next Generation of Auto Fuels.” *Energy.gov News & Blog*, 16 May 2012 available at <http://energy.gov/articles/getting-it-right-accurate-testing-and-assessments-critical-deploying-next-generation-auto>.

⁶ See 76 FR 44409 (July 25, 2011).

that the required misfueling mitigation measures working together with industry-led public outreach and education should effectively mitigate misfueling.

The EPA will also closely monitor information obtained through the recently approved national E15 Compliance Survey to determine the effectiveness of the current E15 misfueling mitigation measures and will impose additional reasonable misfueling mitigations if necessary.

The EPA considered the potential impacts of the misfueling of vehicles and engines not covered by the E15 Partial Waiver Decisions in the E15 Misfueling Mitigation Rulemaking Notice of Proposed Rulemaking. Specifically, the EPA noted that nonroad vehicles, engines and equipment and MY 2000 and older motor vehicles might be affected by the 50 percent increase in oxygen content when going to E15 from E10 and potential materials compatibility issues in fuel systems and engines due to these vehicles, engines, and equipment not being designed to regularly operate on gasoline-ethanol blended fuels. The agency concluded that these issues might have a significant impact on in-use emissions of regulated pollutants. Therefore, to ensure compliance with the misfueling mitigation measures, the EPA used the potential impacts of misfueling MY 2000 and older motor vehicles and nonroad vehicles engines, and equipment with E15 to justify prohibiting the use of E15 in those vehicles, engines, and equipment and require responsible parties to implement the misfueling mitigation measures described in Question #2.