

ISSUE BRIEF

E12: A Pathway to Increased Ethanol Use Today

The U.S. Environmental Protection Agency (EPA) can authorize the use E12 today with existing regulations. This action makes sense because, historically, blends with oxygen content equivalent to nearly E12 have been in the market place without adverse effect.

Currently, EPA is considering a waiver request to increase the amount of ethanol allowed in gasoline from 10% (E10) to up to 15% (E15) by volume. The Renewable Fuels Association (RFA) has joined with others in the ethanol industry asking the EPA to approve fuels containing up to 15% ethanol for automobiles. The RFA firmly believes that, when complete, the scientific evidence will support such a move. In the meantime, the EPA can take action today – action already supported under current laws– to increase the amount of ethanol blended immediately, while it considers the full E15 waiver.

This is the E12 Pathway.

The E12 Pathway

Based on authority provided under the Clean Air Act and on previous fuel approvals, the EPA could deem E12 to be “substantially similar” to E10 and other fuels already approved for use. The issue centers on the oxygen content of the fuel and variances currently recognized by the EPA. Starting with the “gasohol” waiver in 1978 and building upon regulations through the years, the EPA has already allowed for fuels with oxygen contents equivalent to E12 blends.

- *December 16, 1978* -- The original “gasohol” waiver permits up to 10% ethyl alcohol (ethanol). Though the Federal Register notice did not specify volume or weight percent, the “Gas Plus,” who filed the waiver, application requested 10 volume percent (v%) and the waiver use has since been interpreted as such. It is important to note that this waiver allowed the use of 10% ethanol (exclusive of denaturant).
- *July 30, 1993* – A letter from the EPA’s Mary T. Smith established that the weight % (wt%) oxygen of ethanol, per v %, was 0.3473%. At the time, the specification for the water content of ethanol was 1.25v%. The oxygen content of water plus variations in gasoline density could result in 10v% ethanol equating to up to 3.534wt% oxygen.
- *September 7, 1988* – A letter from the EPA’s Richard Wilson acknowledged that base fuels containing no more than 2.0v% methyl tertiary-butyl ether (MTBE) (from unintentional co-mingling) could be used for adding up to 10v% ethanol. Since MTBE is 18wt% oxygen, this raised the permitted level of oxygen for a gasoline ethanol blend to 3.894w%.
- Today, ethanol is denatured at ~ 2.5v% so backing out denaturant and water (as in the Smith letter) yields an oxygen content of 3.351wt% for E10, 3.686wt% for E11, and 4.021wt% for E12.

The oxygen difference between the previous permitted maximum of 3.894wt% oxygen exceeds the oxygen content of an 11v% ethanol (3.686wt% oxygen). For an E12 blend of 4.021wt% oxygen, it is an increase of only 0.127wt%. This is well within the authority range of vehicle oxygen sensors and engine management calibrations.

Moreover, the 11v% oxygen level is below the 3.7wt% cited in the October 1992 guidelines from the EPA and within the valid range in the EPA Complex Model. Considering this, EPA should acknowledge that a correct interpretation of existing regulations should already permit up to E12. The EPA should also recognize that going to E12 is a slight 0.127w% oxygen increase over fuels that have already been in commerce and is well within technology sensitivities.

A complete and detailed outline of the evidence supporting this pathway can found in the RFA's comments to EPA on the E15 waiver request, available on the RFA's website at:
<http://renewablefuelsassociation.cmail1.com/T/ViewEmail/y/01431982E94079C2>.

The RFA strongly believes that when all the testing is concluded, the scientific evidence supporting the safe and effective use of ethanol blends up to 15% will be overwhelming. The RFA also supports the EPA's effort to conduct due diligence before approving the 211(f) fuel waiver to approve ethanol blends up to 15%. Given the numerous research efforts currently taking place to investigate the effects of fuels containing both 15 and 20 volume % ethanol, the EPA may need additional time confirming the viability of higher ethanol blended fuels.