

April 12, 2019

## EPA Proposing to Allow E15 for Summer 2019 and Beyond

Stratas Advisors

On March 12, 2019, the U.S. Environmental Protection Agency (EPA) proposed a regulatory change to allow gasoline to be blended with up to 15 vol% ethanol (E15) in order to take advantage of the 1-psi Reid Vapor Pressure (RVP) waiver which currently applies to E10 during the summer months. The 1-psi RVP waiver for the summer months has historically been applied only to E10, yet with the proposed regulatory change possibly to be finalized before June 2019, E15 would be allowed to be sold year-round without additional RVP control; rather than just eight months during the year.

The decision to initiate a rulemaking to expand waivers for E15 dates back to Oct. 11, 2018, yet carried over into the following year when the EPA held a public hearing in Ypsilanti, MI on March 29, 2019 on the proposed rule "[Modifications to Fuel Regulations to Provide Flexibility for E15](#)." The EPA plans to propose adjusting the volatility requirements for E15 during the summer season (May 1 through September 15), where the modified volatility requirements would allow E15 to receive the benefit of the provision under the Clean Air Act (CAA) section 211 Regulations of Fuels, section (h) RVP requirements, (4) Ethanol waiver; also known as "the 1-psi waiver."

As a result, the 1-psi waiver would allow gasoline-ethanol blends to have a higher RVP than the requirements indicate under CAA sec. 211(h)(1) Prohibition and corresponding volatility regulations; in which the RVP of gasoline is prohibited from exceeding 9.0 psi during summer. Under the current regulations, only gasoline-ethanol blends containing between 9-10 vol% ethanol (E10) are granted the 1-psi waiver. The individuals that may be potentially affected by the proposed rule could include those involved with transportation fuels (gasoline and diesel fuel) and renewable fuels (ethanol, biodiesel, renewable diesel and biogas). Those that may possibly be affected may include the following:

- Petroleum refineries;
- Ethyl alcohol manufacturing;
- Other basic organic chemical manufacturing;
- Chemical and allied products merchant wholesalers;
- Petroleum bulk stations and terminals;
- Petroleum and petroleum products merchant wholesalers;
- Gasoline service stations; and
- Marine service stations.

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Thus in order to make the move to E15, the EPA is proposing to reexamine the regulations under CAA sec. 211(h)(4), propose a regulation that would remove limitations based on the prior interpretation of CAA sec. 211(h)(4) on the volatility in the E15 Misfueling Mitigation Rule (MMR) and modify the associated product transfer document (PTD) requirements in the MMR. In addition, the EPA is proposing to clarify the regulations under CAA sec. 211(f)(4) waivers granted to E15 in 2010 and 2011; so as not to restrict the application of the 1-psi waiver for most downstream oxygenate blenders. By enacting these changes, E15 would be able to be produced and distributed from the same conventional blendstock for oxygenate blending (CBOB) used to make E10 by oxygenate blenders during the summer. The E15 produced would be held to gasoline volatility standards currently applicable to E10 and would have the same level of emissions performance as E10 considering E15 would be made from the same CBOB during summer with a slightly lower RVP.

### **Proposed Interpretation of Clean Air Act Requirements**

Moving forward, the EPA plans to propose to clarify CAA sec. 211(h)(4) to account for the change in the quality of the gasoline sold on the market in comparison to the implemented RVP regulations which would be consistent with the regulation within CAA sec. 211(h) and its congressional intent. Since the EPA interpreted CAA sec. 211(h)(4) in the MMR, the distribution and commercialization of E15 on the market has increased to nearly 1,800 retail stations, out of an approximate 152,000 stations in the U.S. (i.e. approximately a 1.2% share). Yet with the increase of E15 on the market, the fuel faces market limitation by the applicability of the 1-psi waiver specifically for E10. In particular, there is a production shortage of low RVP CBOB available to be blended with 15 vol% ethanol that could still meet the 9.0 psi RVP standard for gasoline during the high ozone season.

Thus, fuel producers that are considering to produce and distribute E15 may not do so due the difficulty in attaining CBOB to blend with ethanol to produce E15 which would meet the 9.0 psi RVP limit during the summer months. In addition, when fuel producers blend 15 vol% ethanol with gasoline, it yields an approximate increase of 1.0 psi RVP, the final RVP for a gasoline-ethanol blend may not be higher than the RVP standard plus the 1-psi waiver; in which E10 should have a 10.0 psi RVP. Thus by extending the 1-psi waiver, the EPA indicated that 15 vol% ethanol may be blended using the same CBOB currently utilized to produce E10 year-round.

To add further clarification, the EPA plans to interpret CAA sec. 211(h)(4) as specifying the minimum ethanol content that ethanol and gasoline fuel blends must contain in order to qualify for the 1-psi waiver. As part of the proposed rulemaking, the EPA will also reexamine the statutory provision under which the 1-psi waiver would apply to gasoline containing at least 10 vol% ethanol. Combined with CAA sec. 211(f), the action would allow the 1-psi waiver for any ethanol blend that has received a CAA sec. 211(f)(4) waiver; including blends up to 15 vol% ethanol according to the EPA's prior issuance of partial waivers under CAA sec. 211(f)(4) for E15.

In continuing the work to make clear what the rulemaking needs to specify, the EPA will address the vague term "containing" in CAA sec. 211(h)(4) in the phrase "fuel blends containing gasoline and 10 percent denatured anhydrous ethanol". From what the EPA has indicated, their interpretation of this term suggests that the language establishes a lower limit on the

minimum ethanol content for a 1-psi waiver in the volatility requirements stated in CAA sec. 211(h)(1); as opposed to an upper limit on the ethanol content. The EPA proposes to interpret the term “containing” as “to have within: hold.” By doing so, the rulemaking will allow for a minimum ethanol content, in which any fuel blend that contains at least 10 vol% ethanol may receive the 1-psi waiver. This would include blends containing more than 10 vol% ethanol such as E15, thereby allowing it to receive the 1-psi waiver specified in CAA sec. 211(h)(4) considering it has 10 vol% denatured anhydrous ethanol.

This type of approach has been utilized prior to this rulemaking when in certain instances, the U.S. Congress may often use terms that signify a minimum or maximum limit. Based on this, in CAA sec. 211(h)(1) the EPA set regulations prohibiting the introduction into commerce of “gasoline with a Reid Vapor Pressure in excess of 9.0 pounds per square inch.” Thus when it is necessary, the regulations can impose a minimum and maximum limit on the content of a particular compound or property of gasoline. Yet in CAA sec. 211(h)(4), the regulation provides for a higher RVP limit for “fuel blends containing gasoline and ten percent ethanol.” In this instance, unlike other statutory provisions, the EPA believes this term is ambiguous considering the provision does not include terms modifying the term “containing”. As a result, the EPA will interpret the term “containing” to mean “containing at least” based on where the CAA sec. 211(h)(4) regulation has used only the ambiguous term “containing”.

Furthermore, the EPA also takes into account the 1-psi waiver “deemed to comply” language in CAA sec. 211(h)(4) to allow gasoline with more than 10 vol% ethanol if allowed under separate provisions of the CAA. Thus, the gasoline-ethanol blend is “deemed to comply” not because it is E10, rather due to it being a blended fuel that has received a CAA sec. 211(f)(4) waiver. The EPA will also advance their position for E15 by referring to the “deemed to comply” provision as an “alternative enforcement arrangement” which allows for the simplifying of compliance demonstrations due to the inconsistency between production of gasoline batches. In this scenario, the “deemed to comply” provision allows the EPA to interpret that the 1-psi waiver under CAA sec. 211(h)(4) is applicable to gasoline with greater than 10 vol% ethanol.

Consequently, for an ethanol blend beyond with a CAA sec. 211(f)(4) waiver at the time of enactment, the “deemed to comply” provision lays out the compliance mechanisms for regulated parties due to the EPA’s waiver authority is not limited to gasoline containing any particular level of ethanol. In addition, under CAA sec. 211(h)(4)(B), the requirement indicates that the “deemed to comply provision” applies upon demonstration that “the ethanol portion of the blend does not exceed its waiver condition under subsection (f)(4)”. Based on that wording, the EPA interprets the phrase as only applying to the waiver condition specifying the ethanol content of the fuel; in which E15 contains an ethanol portion that does not exceed the 211(f)(4) waiver condition in accordance with the E15 waivers issued in 2010 and 2011.

Hence, to cover the future expansion of E15, the EPA may interpret CAA sec. 211(h)(4) as specifying the minimum ethanol content for ethanol-gasoline blends for purposes of the 1-psi waiver while the deemed to comply provision could be construed as a defense against liability for any ethanol blend that has received a CAA sec. 211(f)(4) waiver. Moreover, while advancing the use of ethanol consistent with the CAA sec. 211(h)(4) provision, the EPA places significant importance

on the need to balance the goals of limiting gasoline volatility while ensuring that the addition of ethanol does not cause the exceedance of the maximum RVP standard. Lastly, through this rulemaking, the EPA plans to address concerns with the proposed rulemaking considering that this will ultimately permit similar treatment to all ethanol-gasoline blends.

### **Regulatory Amendments**

In order to achieve moving forward with the proposed interpretation under CAA sec. 211(h)(4) to allow the 1-psi waiver for E15 during the summer months, the EPA will modify or remove certain aspects related to volatility, the MMR and PTD requirements. Initially, the agency will propose to modify or remove volatility controls which place limitations on the RVP of gasoline-ethanol blends at specific concentrations (40 CFR 80.27) based on the prior interpretation of CAA sec. 211(h)(4). The EPA will also propose to modify the controls extending the 1-psi waiver for gasoline containing 9–10 vol% ethanol to blends containing 9–15 vol% ethanol per 40 CFR 80.27 requirements and related defense provisions in 40 CFR 80.28; thus achieving the proposed interpretation of CAA sec. 211(h)(4) to expand the “special treatment for gasoline-ethanol blends” to fuel blends containing 9–15 vol% ethanol.

Secondly, the agency plans to remove or modify provisions in the MMR that were enacted to carry out the prior 1-psi waiver interpretation under CAA sec. 211(h)(4). Following the partial waivers for E15 as granted under the CAA sec. 211(f)(4) provisions, the agency implemented regulations under CAA sec. 211(c) to ensure that E15 would not be used in certain vehicles and engines for which the waivers did not apply. In order to accomplish this objective, the EPA publicized the regulations to ensure that those same conditions were enforceable to downstream parties, as well as the conditions on the waivers that applied to fuel manufacturers.

Lastly, the agency is planning to remove the PTD requirements related to the 1-psi waiver within 40 CFR 80.1503. The EPA included PTD language in 40 CFR part 80, subpart N, designed to help ensure that E15 that did not receive the 1-psi waiver would be segregated from E10 that did receive the 1-psi waiver. With the agency proposing to allow the 1-psi waiver for E15, the EPA believes they will no longer need these PTD requirements. Yet for individuals that produce and distribute gasoline-ethanol blended fuels, they would still be required to identify the ethanol concentration on PTDs as specified in the provisions in 40 CFR 80.27 and 40 CFR 80.1503.

### **Potential Benefits and Concerns**

With the possible distribution and commercialization of E15 in the future, the EPA expects that through the use of E15 at 10.0 psi RVP during the summer driving months may help incentivize fuel retailers to further expand and introduce E15 into the marketplace. Among one of the benefits that may arise through the expansion of E15, drivers may observe a modest decrease in fuel prices at the pump where the denatured fuel ethanol is less expensive than gasoline. As a result, the U.S. could benefit from energy security by expanding the use of increased volumes of renewable fuels under the Renewable Fuel Standard (RFS) program. In terms of the commercialization of the fuel, the EPA believes that their proposed rulemaking to allow E15 to take advantage of the 1-psi waiver during the summer driving months may help open new market opportunities

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for E15. This stance would be dependent upon the fuel manufacturers and distributors of E15 producing and offering the blend based on market demands and individual business decisions.

Looking forward, the EPA believes that there may be minor changes in costs regarding the proposed regulatory provisions to allow E15 to receive the 1-psi waiver in the summer. Furthermore, the agency believes that the proposed rulemaking would not place any new regulatory burdens on parties in the gasoline or denatured fuel ethanol distribution system; yet modifies, but does not remove, PTD requirements for E15. Through these actions, the agency expects that the proposed provisions would not substantially alter the cost of compliance for producers and distributors of E15.

Yet despite the possible expansion of E15 on the market, there are stakeholders which have raised concerns regarding whether the remaining E15 misfueling mitigation measures would be sufficient within the proposed rulemaking. The main concern appears to be an increase in the potential misfueling of E15 in nonroad vehicles, engines, equipment and in MY2000 and older light-duty vehicles with the increased availability of E15 on the market. Based on the concerns and advancements in technology since the MMR rule, the EPA will review all comments addressing misfueling mitigation measures to help avoid the misfueling of E15. Even though the agency believes that additional misfueling measures may not be necessary at this time, additional misfueling mitigation measures may be crucial as E15 and other higher-level ethanol blends become more prevalent.

Moreover, the EPA looks to negate the additional misfueling mitigation measures which could place a significant financial burden on small business retailers that may have to upgrade equipment at their facilities. In order to properly address the impact of additional misfueling mitigation measures may have, the EPA will seek and review comments on whether the measures are appropriate; specifically as it pertains to the costs and benefits of such measures on affected parties.

In regards to the expected emissions of E15, the agency believes that they will be similar to those of an E10 Tier 3 certification fuel when used in Tier 3 light-duty vehicles. The EPA estimates that 60% of volatile organic compounds (VOC) emissions come from the evaporative emissions of the current vehicle fleet during the summertime conditions, thus the VOC emissions contribute to ambient levels of ozone, particulate matter (PM) and air toxics. Therefore, the agency understands that vehicle manufacturers have been required to certify their vehicle and engines on a test gasoline fuel with a volatility of 9.0 psi RVP under severe operating conditions which may reflect what is observed during high ozone days. As a result, the evaporative emission standards have progressively increased in stringency over time to essentially require zero vapor loss during normal operation on 9.0-psi fuel under the current Tier 3 standards.

Ultimately, the EPA realizes that controlling the volatility of gasoline during the summer driving months is of high importance to control the VOC emissions produced by the current vehicle fleet and engines in-use. Lastly, the proposed rulemaking by the agency aims to change the volatility standard applicable to the current E15 blend from 9.0 psi to 10.0 psi RVP. Although when viewed as a change on its own, the EPA believes the expected result could cause a significant increase in evaporative emissions; thus requiring an examination of current real-world circumstances to accurately assess emission impacts. Lastly,

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EPA expects that the introduction of E15 with a slightly lower RVP than E10 when made from the same BOB, will displace the E10 blend which currently carries the 1-psi waiver in conventional gasoline areas.

### **Stratas Advisors' Views**

The move towards a higher ethanol blend has progressed at a moderate pace since last year when the EPA advanced the initiative to issue a public rulemaking to expand waivers for E15. With the comment period currently underway, the EPA is working to have a final rule in place prior to the summer driving months which the agency has determined to run from May 1-September 15. From what has been learned from the comment submission process, there have been some concerns raised as to what the E15 blend may have on older models still in use in the current vehicle fleet. In general, Stratas Advisors has learned that possible engine damage from corrosion and poor gas mileage appear to be a common concern from the numerous comments received from the public.

This sentiment appears to be shared by stakeholders in the industry as well; according to Mike Sommers, president of the American Petroleum Institute (API), he indicated that the E15 shift “is not in the best interest of consumers due to the possible risks in engine damage in older vehicles still in use today.” Not only have concerns been raised to the possible damage to vehicles, the American Motorcyclist Association (AMA) submitted comments to the EPA over their concern regarding the potential risk to motorcycles and all-terrain vehicles. According to Michael Sayre, government affairs manager of AMA, “none of the estimated 22 million motorcycles and all-terrain vehicles in use in the United States are approved by the EPA to operate on ethanol blends higher than 10 percent.” Additionally, the AMA also indicated that “using higher-ethanol blends in those vehicles is illegal and may cause engine and fuel system damage and void the manufacturer’s warranty.” Yet in contrast to the stance taken by the API, according to Ford Motor Company’s spokesman John Cangany, the auto manufacturer is “no longer opposed to E15 considering they have built vehicles capable of running on the fuel since model year 2013.”

Thus, once the review process has been completed, Stratas Advisors expects that the EPA will have taken the necessary measures to ensure that concerns over the potential damage to a vehicle or motorcycle have been addressed. This may involve promoting a public education campaign to inform motorists regarding the use and compatibility of E15 within the motorcycle and vehicle fleet. Furthermore, the agency may need to provide the public with information as to which vehicles in the current fleet are capable of running on E15. This approach would aid in clarifying concerns that motorists may have on whether their vehicle has been manufactured to handle ethanol-gasoline blends of up to 15 vol%.

In addition, through the use of established practices, Stratas Advisors expects that the EPA will address the need to ensure that the pumps at the retail stations are clearly marked to indicate the ethanol content of gasoline. With the use of biofuels (ethanol, biodiesel) in the U.S., the fuel pumps have been marked or labeled with the content of ethanol or biodiesel to inform the vehicle operator. Moreover, the EPA will need to address the maximum oxygen content allowed in conventional gasoline to illustrate the change to 15 vol% ethanol (see table below). Lastly, Stratas Advisors will monitor the progress of the proposed rulemaking for E15 and the possible modifications to the initial draft.

### Current Oxygen Limit in U.S. Gasoline Specifications

	2019	2019	2019	2019
Spec Name	Conventional	ASTM D 8011 - 18	ASTM D 8011 - 18	ASTM D4814-19
Grade	All	Natural Gasoline as Denaturant in Denatured Fuel Ethanol for Blending with Gasoline	Natural Gasoline as Hydrocarbon Blendstock for Ethanol Fuel Blends	Unleaded
Grade Category	On-road	Blendstock	Blendstock	On-road
Effective Date	Jan, 2017	Oct, 2018	Oct, 2018	Jan, 2019
Source	EPA	ASTM International	ASTM International	ASTM International
Additional Comments				
<b>Properties</b>				
Oxygen, wt%, max	2.7 (1)			

(1) If ethanol is the only oxygenate added to gasoline, the maximum oxygen content is 3.5 wt% (which corresponds to 10 vol% ethanol).