

F. JAMES SENSENBRENNER, JR.  
FIFTH DISTRICT, WISCONSIN

COMMITTEE ON THE JUDICIARY

SUBCOMMITTEE ON  
CRIME, TERRORISM, AND  
HOMELAND SECURITY  
CHAIRMAN

COMMITTEE ON SCIENCE, SPACE,  
AND TECHNOLOGY  
VICE-CHAIRMAN



Congress of the United States  
House of Representatives  
Washington, DC 20515-4905

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July 5, 2011

The Honorable Lisa Jackson  
Administrator  
The Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20004

Dear Administrator Jackson,

The Environmental Protection Agency (EPA) is increasingly out of touch with American consumers. Rebuilding our economy doesn't require that we sacrifice our environmental ideals, but the costs of agency actions must be balanced against the environmental benefits. Increasingly, the EPA seems focused on regulatory action with crippling costs and, at best, minimal environmental benefits.

The EPA recently issued a waiver to allow gasoline blends of up to 15% ethanol (E15) in cars and trucks of model year 2001 and later. This decision was apparently based on narrow Department of Energy testing that did not consider the effect that E15 would actually have on car engines.

On June 1, 2011, I wrote to 14 auto manufacturers and asked 3 questions: (1) Will E15 damage engines of model year 2001 and later? (2) Will your warranties cover damage from E15? and (3) Will E15 negatively affect fuel efficiency?

Engine manufacturers have been nearly unanimous in their beliefs that E15 will damage engines, void warranties, and reduce fuel efficiency. In difficult economic times, consumers need to get more miles from a gallon of gas and extend the lives of their cars. EPA's waiver threatens the already precarious financial situation of American families with no discernible environmental benefit.

I have attached all the responses, but want to highlight quotes from each manufacturer:

**Chrysler:** "We are not confident that our vehicles will not be damaged from the use of E15 . . . The warranty information provided to our customers specifically notes that use of the blends beyond E10 will void the warranty."

**Ford:** "Ford does not support the introduction of E15 into the marketplace for the legacy fleet . . . Fuel not approved in the owner's manual is considered misfueling and any damage resulting from misfueling is not covered by the warranty."

**Mercedes-Benz:** "Any ethanol blend above E10, including E15, will harm emission control systems in Mercedes-Benz engines, leading to significant problems."

**Honda:** "Vehicle engines were not designed or built to accommodate the higher concentrations of ethanol . . . There appears to be the potential for engine failure."

**Mazda:** "The record fails to demonstrate that motor vehicles would not be damaged and result in failures when run on E15."

**Toyota:** "Toyota cannot recommend the use of fuel with greater than E10 for Toyota vehicles currently on the road . . . Our policy remains that we will not provide warranty coverage for issues arising from the misuse of fuels that exceed specified limits."

**Nissan:** "We are not at all confident that there will not be damage to MY 2001 and later vehicles that are fueled with E15. In our view the record fails to demonstrate that motor vehicles . . . would not be damaged and result in failures when run on E15."

**Volkswagen:** "Volkswagen agrees that the EPA did not conduct an adequate test program when E15 was considered and then approved for use in conventional vehicles. . . Our current warranty will not cover problems stemming from the use of E15."

**Volvo:** "The risks related to emissions are greater than the benefits in terms of CO<sub>2</sub> when using low-blend E15 for variants that are designed to E10."

**BMW:** "BMW Group engines and fuel supply systems can be damaged by misfueling with E15 . . . Damage appears in the form of very rapid corrosion of fuel pump parts, rapid formation of sludge in the oil pan, plugged filters, and other damage that is very costly to the vehicle owner."

**Hyundai:** "The EPA tests failed to conclusively show that the vehicles will not be subject to damage or increased wear."

**Kia:** "EPA testing failed to determine that vehicles will not be subject to damage or increased wear."

And the problems do not stop there. On June 22, 2011, I sent a second letter to small engine manufacturers. While the EPA's waiver does not apply to small engines, many small engines are fueled remotely—gasoline is initially filled into a container which is then used to fuel the engine. This creates a substantial risk of misfueling despite the EPA's labeling efforts. In my June 22 letter, I asked small engine manufacturers if they were confident that the EPA had done enough to avoid misfueling and whether they thought E15 would damage their engines. In the limited responses I have received, small engine manufacturers have expressed significant concerns. These responses are also attached.

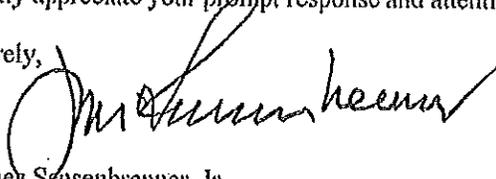
E15 is a product that simply does not belong in the marketplace. I am writing to urge the EPA to heed these warnings and reconsider its E15 waiver. In furtherance of my work on the House Science, Space and Technology Committee and on behalf of my constituents, please respond to the following questions by July 21, 2011:

1. Did the EPA consider the effects E15 would have on engine durability and fuel efficiency before granting its waiver?
2. Is the EPA confident that E15 will not damage car engines in model years 2001 and later?

3. What effect does the EPA believe that E15 will have on fuel economy?
4. Does the EPA believe that its recent labeling safeguards for E15 will be sufficient to prevent misfueling in car and truck engines older than model year 2011 and in small engines?

I greatly appreciate your prompt response and attention to this matter.

Sincerely,



F. James Sensenbrenner, Jr.  
Vice-Chairman, House Committee on Science, Space, and Technology

cc: The Honorable Ralph Hall  
Chairman, Committee on Science, Space, and Technology

The Honorable Eddle Bernice Johnson  
Ranking Member, Committee on Science, Space, and Technology



Kia Motors Corporation Washington Office  
1660 L Street, NW, Suite 201  
Washington, DC 20036  
Tel: 202-503-1515 Fax: 202-503-1516

July 1, 2011

The Honorable F. James Sensenbrenner, Jr.  
Vice-Chairman, House Committee on Science, Space and Technology  
United States House of Representatives  
Room 2499  
Rayburn House Office Building  
Washington, DC 20515-5101

Dear Vice-Chairman Sensenbrenner,

Thank you for your June 1, 2011 letter to Kia Group President and Chief Executive Officer Byung Mo Ahn inquiring on Kia's views of ethanol blends and the Environmental Protection Agency (EPA) efforts to change the levels of use by 50 percent or to an E15 level. We are honored to be asked to comment on your work for the House Committee on Science, Space and Technology and are pleased to respond to your specific questions on E15.

Overall, Kia believes more testing is required before introducing a new fuel into the marketplace. Scientific review can determine the positive and negative impact a new fuel can have on air quality, consumer acceptance and engine durability.

We have addressed your questions outlined in the June 1 letter:

*Question One on confidence that our cars and trucks from model year 2001 and later will not be damaged by or wear out more quickly from the use of E15; EPA testing failed to determine that vehicles will not be subject to damage or increased wear. Therefore Kia has no basis to conclude that vehicles will not be damaged by or wear out faster due to the use of E15.*

*Question Two concerning current warranties and potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later; On pages 9-10 of the Warranty Manual, Kia states: "Improper maintenance or the use of other than the specified fuel, oil or lubricants recommended in your Owner's Manual. It is your obligation to ensure that you obtain all fuels, oils and lubricants from reliable vendors using quality products which meet the Kia specifications identified in your Owner's Manual. In the event that problems result to your vehicle due to service from vendors who use reduced quality products, your vehicle warranties will not provide coverage."*



Kia Motors Corporation Washington Office  
1660 L Street, NW, Suite 201  
Washington, DC 20036  
Tel: 202-503-1515 Fax: 202-503-1516

Kia's Owner's Manual in section 1, page 3 provides that owner's shouldn't use anything greater than 10% ethanol and that a 15% mixture will damage the vehicle. (Kia Warranty and Owner's Manuals are attached for your review)

*Question Three on the effect of E15 on the fuel efficiency of our engines; Kia believes that E15 will lead to degradation in fuel efficiency due to the lower energy content than gasoline.*

Thank you for your letter and the opportunity to share our views on E15. If you have further comments or questions, I can be reached on 202 503-1515 or [jta@kia-dc.com](mailto:jta@kia-dc.com).

Sincerely,

A handwritten signature in black ink that reads "J. T. Anderson" with a long horizontal flourish extending to the right.

John T. Anderson  
Director, Kia Government Affairs

cc: The Honorable Ralph Hall  
Chairman, Chairman Committee on Science, Space and Technology

The Honorable Eddie Bernice Johnson  
Ranking Member, Committee on Science, Space and Technology

Mr. Byung Mo Ahn  
Group President and Chief Executive Officer  
Kia Motors America

# HONDA

Honda North America, Inc.  
1001 G Street, N.W. Suite 950  
Washington, D.C. 20001  
Phone (202) 681-4400

June 13, 2011

Hon. F. James Sensenbrenner, Jr.  
Vice Chairman  
Committee on Science, Space, and Technology  
House of Representatives  
Washington, D.C. 20515-4905

Dear Mr. Vice Chairman:

Mr. Tetsuo Iwamura, President and Chief Executive Office of American Honda Motor Company, Inc., has asked that I respond to your June 1, 2011, letter regarding the Environmental Protection Agency's recent approval of a blend of 15 percent ethanol (E15) for use in cars and trucks of Model year 2001 or later. You have raised the following three questions:

1. Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?

As you know, the Clean Air Act requires motor vehicle manufacturers to certify that the vehicles they sell will meet or exceed emissions standards in effect at the time each vehicle is introduced into commerce. There are specific testing protocols that must be employed for certification, including specifications for fuels used in the vehicles during testing. As a result, we engineer our vehicles to meet or exceed the standards utilizing the prescribed test fuel, which never has contained ethanol. However, given the fuels prevalent in the market over the last decade, the engines in Model Year 2001 later vehicles were built to operate on fuels with ethanol concentrations of up to 10% (E10).

Authorizing the sale of E15 in 2010 for vehicles built after 2001 presents an obvious problem for auto manufacturers – vehicle engines were not designed or built to accommodate the higher concentrations of ethanol. The differences between E10 and E15, including E15's higher oxygen content, lower energy content and heightened corrosivity, require use of more robust component materials and different engine calibrations. The engines in our Model Year 2001 and later vehicles do not have those necessary materials or calibrations.

In our owner's manuals, Honda requires its customers to refuel their vehicles with E10 or below. The impact of E15 on our engines is not completely known at this stage, although there appears to be the potential for engine failure. During the EPA's consideration of the partial waiver approving the use of E15, Honda and its trade association, the Association of International Automobile Manufacturers (AIAM) (now known as Global Automakers), urged the agency to defer its decision until such time as the testing program on the impact of E15 on vehicles is complete. The testing is being managed by the Coordinating Research Council (CRC), an independent organization funded by the automobile and oil industries, with limited contributions from the U.S. government. Honda is a member of the CRC and active in its testing.

It is unfortunate that EPA did not wait for the results of the seven major test programs that are being undertaken by CRC. These programs include critical tests for engine durability and fuel system material compatibility. Potential E15-related failures have already been identified in some of these programs, including the possible confounding of a vehicle's on-board diagnostic system. This can lead to illumination of the "check engine" light when in fact there is no malfunction, or the failure of the light to illuminate when there is a problem.

Because E15 has not been in the market and our engines were not designed for its use, we do not have a detailed understanding of the implications of the widespread use of the fuel in our vehicles. However, these early results from the CRC testing cause us concern. The CRC studies are due to be completed beginning in late-2011.

**2. Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?**

As noted above, Honda products were designed, built and certified to operate on E10 and below. Use of higher blends could compromise the vehicle's warranty.

**3. Will E15 affect the fuel efficiency of your engines?**

Ethanol contains less energy than gasoline on a gallon-for-gallon basis. Accordingly, customers can expect to experience about 5% - 6% inferior fuel economy using E15 rather than E0 (the difference between E10 and E15 will be smaller). Customers using E85 (in a vehicle designed to use E85) instead of E10 will experience about a 27% decrease in fuel economy. For example, a vehicle that gets 300 miles to the tank on today's gasoline will likely achieve only about 219 miles to the tank with E-85.

If you have further questions regarding E15, please feel free to contact me at (202) 661-4400.

Sincerely,



Edward B. Cohen  
Vice President  
Government & Industry Relations

cc: The Honorable Ralph Hall, Chairman  
Committee on Science, Space, and Technology

The Honorable Eddie Bernice Johnson, Ranking Member  
Committee on Science, Space, and Technology



Jody Trapasso  
Senior Vice President  
External Affairs

June 23, 2011

The Honorable F. James Sensenbrenner, Jr.  
Vice-Chairman  
House Committee on Science, Space and Technology  
U.S. House of Representatives  
2449 Rayburn House Office Building  
Washington, DC 20515-4905

Dear Vice-Chairman Sensenbrenner:

Sergio Marchionne asked me to respond to your June 1, 2011 letter requesting information about the Environmental Protection Agency's (EPA or Agency) decisions to allow the use of 15 percent ethanol (E15) in passenger cars and light trucks beginning with the 2001 Model Year (MY).

Beginning in the late 1970's, Chrysler was one of the first automakers to endorse and support the use of "gasohol" (i.e., gasoline with up to 10 percent ethanol, or E10). Since then, all of our conventional gasoline-fueled cars and trucks have been designed and warranted for E10 operation. Chrysler has also produced Flexible-Fuel Vehicles (FFVs) since the 1998 MY and voluntarily committed that 50 percent of our fleet produced by 2012 will be capable of operating on renewable fuels. These vehicles are designed, warranted and developed to operate on gasoline, E85 ethanol or any blend in between.

While Chrysler has been a strong advocate of renewable fuels, we have concerns about the potential harmful effects of E15 in engines and fuel systems that were not designed for use of that fuel. In cooperation with other automakers, we have been conducting tests of vehicles in the 2001 and later model year vintage to assess the effect of E15 on their engines and fuel systems. Prior to EPA's decisions to allow E15, we had requested that the Agency defer from making any decisions regarding higher ethanol blends for conventional vehicles until existing testing programs have been completed and the data fully evaluated.

Provided below are answers to the three specific questions asked in your letter.

**1. Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?**

No, we are not confident that our vehicles will not be damaged from the use of E15. While future products could be designed to accommodate E15 or other mid-level blends of ethanol, testing to date suggests that both newer and older models (non-FFVs) may experience more engine wear and fuel system damage from the use of E15.

**2. Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?**

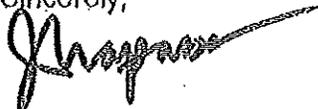
No. Chrysler's conventional vehicles (non-FFVs) are only warranted for use of E10. The warranty information provided to our customers specifically notes that use of blends beyond E10 will void the warranty.

**3. Will E15 affect the fuel efficiency of your engines?**

Yes. The energy content (Btu/gallon) of fuel decreases as the ethanol concentration increases. As a result, we expect the fuel efficiency of our conventional products (non-FFVs) to decrease with any increase in ethanol content.

I hope that this information responds to your request. Please do not hesitate to contact me if you need any additional information.

Sincerely,



Jody Trapasso



Susan M. Cischke  
Group Vice President-Sustainability,  
Environment & Safety Engineering

World Headquarters  
One American Road  
Dearborn, MI 48126-2798 U.S.A

June 8, 2011

The Honorable James Sensenbrenner, Jr.  
Vice-Chairman, House Committee on  
Science, Space, and Technology  
Rayburn House Office Building, Room 2449  
Washington, D.C. 20515

Dear Vice-Chairman Sensenbrenner:

Alan Mulally has asked me to respond to your letter of June 1 regarding the introduction of E15 fuel into the marketplace.

At Ford, we recognize the need to increase the use of biofuels to meet the country's goals of energy security and reduced greenhouse gas emissions. Ford has produced, and continues to offer, a substantial number of flexible fuel vehicles (FFV) capable of operating on E85 (85% ethanol) across many models. The renewable fuel standard, passed into law in 2007, requires 36 billion gallons of biofuels to be blended into transportation fuel by 2022. In order to meet that goal, the country needs to increase the use of ethanol beyond the 10% (E10) used today, but needs to do so in a fashion that does not have a negative impact on the legacy fleet.

This can be accomplished by taking a prospective approach to the introduction of mid-level blends whereby manufacturers, provided with enough lead time, can design new vehicles with the capability of accommodating the new fuel. Likewise, the lead time will give fuel providers an opportunity to prepare to make the new fuel available nationwide. In contrast, an approach in which fuel specifications are changed abruptly, and the new fuel is allowed to be used on vehicles that were not designed for it, is likely to lead to undesirable outcomes for consumers, the new fuel, and the legacy vehicles.

Below are answers to your specific questions:

**Q1 Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?**

Ford does not support the introduction of E15 into the marketplace for the legacy fleet. The entire legacy fleet of non-FFVs, including vehicles built in model year 2001 and later, consists of vehicles that were designed to operate in a range of fuels from pure gasoline up to a blend of 10 percent ethanol (E10) -- not E15. We remain concerned that legacy fleet, operating on a fuel the vehicles were not designed for, will not meet customer expectations for quality, durability, performance and fuel economy, as well as legal requirements to meet emission standards and

on-board diagnostic regulations. Efforts to increase renewable fuel use must be carried out in a way that does not create undue risks and problems for existing vehicles on the road.

**Q2 Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?**

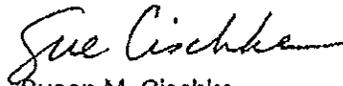
The owners' manuals for these legacy vehicles do not identify E15 as a fuel that may be used in the vehicles. They go on to say that the use of a fuel not approved in the owners' manual is considered misfueling, and that any damage resulting from misfueling is not covered by the warranty. To the extent that E15 is introduced into commerce, we will work with our customers and dealerships as best we can to address any potential concerns, but we cannot redesign vehicles that have already been built and sold.

**Q3 Will E15 affect the fuel efficiency of your engines?**

Going from the generally available E10 fuel to E15 will not have a significant impact on the efficiency of the engine, but because ethanol contains less energy per a given volume of fuel, customers will experience slightly lower miles per gallon when driving on E15 versus E10.

Ford appreciates the opportunity to provide our views on this subject. Thanks again for your continued support of the automotive industry.

Sincerely,



Susan M. Cischke  
Group Vice President  
Sustainability, Environment & Safety Engineering  
Ford Motor Company

cc: The Honorable Ralph Hall  
Chairman, Committee on Science, Space, and Technology

The Honorable Eddie Bernice Johnson  
Ranking Member, Committee on Science, Space, and Technology

Mazda North American Operations

James J. O'Sullivan  
President and CEO



June 7, 2011

The Honorable R. James Sensenbrenner  
Vice-Chairman  
House Committee on Science, Space and Technology  
United States House of Representatives  
2449 Rayburn House Office Building  
Washington, D.C. 20515-4905

Dear Vice-Chairman Sensenbrenner:

We appreciate receiving your June 1, 2011 letter regarding EPA's two partial waiver decisions that permit the sale of gasoline containing up to 15 percent ethanol (E15) for 2001 model year (MY) and newer passenger cars and light trucks. We believe that increasing the allowable ethanol content in gasoline by 50 percent will have unintended consequences for auto manufacturers, consumers, fuel suppliers and distributors. Mazda's primary concern about an E15 waiver is the overriding need for consumer satisfaction.

Specifically, your letter asks for responses to the following three questions. Our responses are provided below.

1. Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?

No, we are not at all confident that there will not be damage to MY 2001 and later vehicles that are fueled with E15. In our view, the record fails to demonstrate that motor vehicles (other than FFVs) would not be damaged and result in failures when run on E15. No Mazda vehicles were included in the models tested by the government.

2. Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?

Mazda vehicles covered by the waiver were designed to use a maximum of E10. The direction in the owner guides of Mazda vehicles reflects the fact that they were not designed to run on E15. EPA regulations allow manufacturers to deny warranty coverage for vehicles damaged due to mis-fueling (based on the owner's manual instructions). We are encouraging Mazda vehicle owners to continue to consult their owners' manuals for information regarding the appropriate fuel for their vehicles.

Mazda owner's manuals specify the following:

*"Your vehicle can use only oxygenates that contain no more than 10 percent ethanol by volume. Harm to your vehicle may occur when ethanol exceeds this recommendation, or if the gasoline contains any methanol."*

*"Vehicle damage and drivability problems resulting from the use of the following may not be covered by the Mazda warranty.*

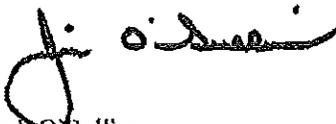
- *Gasohol containing more than 10% ethanol.*
- *Gasoline or gasohol containing methanol.*
- *Leaded fuel or leaded gasohol."*

**3. Will E15 affect the fuel efficiency of your engines?**

Yes. A gallon of ethanol has lower energy content than a gallon of gasoline. Therefore, any increase in ethanol content will necessarily degrade fuel economy.

Thank you for considering our views. If you have any questions about this information, please contact Barbara Nocera at [bnocera@mazdausa.com](mailto:bnocera@mazdausa.com) or 202.467.5096.

Sincerely,



James J. Sullivan

cc: The Honorable Ralph Hall  
Chairman, Committee on Science, Space, and Technology

The Honorable Eddie Bernice Johnson  
Ranking Member, Committee on Science, Space, and Technology

# BMW Group

June 23, 2011

The Honorable F. James Sensenbrenner, Jr.  
Vice-Chairman  
House Committee on Science, Space, and Technology  
United States House of Representatives  
Washington, DC 20515-4905

Dear Mr. Vice-Chairman:

This is in response to your June 1, 2011 letter regarding the recent approvals by the EPA to permit a gasoline blend of 15 percent ethanol (E15) for use in model year 2001 and later passenger cars and light trucks. Our Chairman asked me to respond to your request.

On behalf of BMW of North America, LLC (BMW NA), please find below your questions followed by our answers.

**1. *Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?***

BMW NA Response: No. BMW Group engines and fuel supply systems can be damaged by misfueling with E15. BMW has designed its engines and fuel systems to operate with gasoline up to E10 and our owners have already experienced damage when, for example, a gasoline terminal mixes greater than 10% ethanol into the tanker. As a result of periodic damage, BMW NA has issued Service Information Bulletins (attached) warning of potential damage, and our dealers have ethanol test kits to measure the percentage of ethanol in the vehicle's tank.

Damage appears in the form of very rapid corrosion of fuel pump parts, rapid formation of sludge in the oil pan, plugged filters, and other damage that is very costly to the vehicle owner.

As you would expect, engines and fuel systems already on the road cannot be retroactively designed to be compatible with ethanol blends higher than used for the original design.

**2. *Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?***

BMW NA Response: No. Our warranty states that it does not cover malfunctions caused by use of fuels containing more than 10% ethanol. Our dealers have an alcohol detection tool to identify ethanol blends that exceed the allowable 10% maximum. We anticipate that the owners of vehicles damaged by higher levels of ethanol will be frustrated, notwithstanding the warnings contained in our warranty booklets.

Company  
BMW of North America, LLC

BMW Group Company

Office address

200 Chestnut Ridge  
Road  
Woodcliff Lake, NJ 07677

Telephone  
(201) 571-5071

Fax  
(201) 571-5479

E-mail  
Tom.Baloga@bmwna.com



### **3. Will E15 affect the fuel efficiency of your engines?**

Response: Yes. Engine compression ratios, turbo-charging pressures, and control mapping are designed to optimize fuel economy, performance, and emissions based on a maximum of E10. Since ethanol has about 34% less energy than gasoline, an engine designed to run on up to E10 will suffer a corresponding loss in fuel economy. More importantly, use of ethanol blends higher than E10 in the wrong engines will result in drivability problems at high and low temperatures including hard starting, stalling, and hesitation.

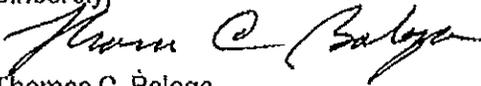
### **Recommendations**

BMW NA respectfully makes the following recommendations if increased percentages of ethanol in gasoline are required:

- Legacy E10 gasoline must be required by law for the next 15 years to accommodate vehicles, motorcycles, and other power equipment currently in use that would be damaged by E10+.
- Implementation of effective efforts to prevent misfueling, including requiring strong language on pump labels on E10+ pumps that warn of damage from misfueling and advise users to "Check your owner's manual for ethanol warnings," and consider the use of a different nozzle size for E10+ pumps to diminish the chance of inadvertent misfueling.
- An ethanol misfueling owner reimbursement clearinghouse, funded by the ethanol industry, should be established by law to allow owners to recoup repair costs from misfueling damage. Vehicle OEMs and gas station owners should be indemnified from damages caused by misfueling.
- By law, before a gas station storage tank is filled with ethanol blends greater than E0 or E10 for the first time, the tank must be cleaned and filters installed to prevent newly-dissolved dirt caused by water and alcohol from being pumped into consumers' tanks.
- In general, we favor the introduction of an increase to E20 in ethanol content together with a 5 year minimum lead time for engine and fuel system developers.

If you or your staff has further questions, please contact me at 201-571-5071.

Sincerely,



Thomas C. Baloga  
Vice President, Engineering US

cc: The Honorable Ralph Hall  
Chairman, Committee on Science, Space, and Technology

The Honorable Eddle Bernice Johnson  
Ranking Member, Committee on Science, Space, and Technology

Enclosures



# Service Information

Fuel Systems

B13 05 10

Page 1 of 2

April 2011

Technical Service

This Service Information bulletin replaces SI B13 04 06 dated August 2006.

## SUBJECT

### Testing Fuel Composition

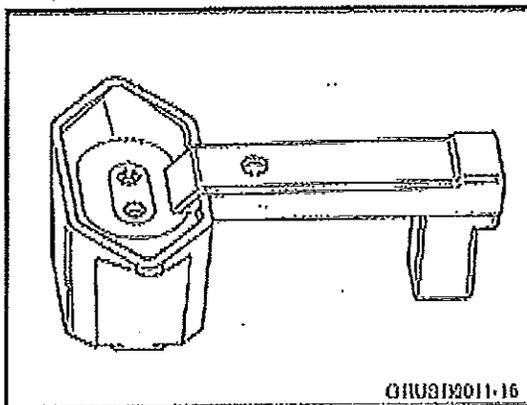
## MODEL

All

## SITUATION

Fuel blends containing a high percentage of alcohol (10% and above), mainly ethanol, are becoming more commercially available. Usage of E85 or any other high alcohol content blend (e.g., E30) in BMW vehicles will cause various drivability complaints (cold start problems, stalling, reduced performance, poor fuel economy, etc.); may cause excessive emissions; and may cause irreversible damage to engine, emission control and fuel delivery systems due to incompatibility of materials with alcohols. Refer to SI B13 01 06 Alcohol Fuel Blends in BMW Vehicles for complete details.

In order to correctly diagnose various drivability complaints caused by fuel blends with a high level of ethanol content, BMW is providing you with an electronic fuel composition tester.



Fuel Composition Tester  
P/N 83 30 0 439 685

Refer to B04 04 11 for more details.

## PROCEDURE

### Safety Precautions:

- Gasoline is highly flammable; observe normal precautions for working with flammable liquids. Perform all tests away from any source of ignition. A class B fire extinguisher must be available.
- Wear protective eye protection with side shields and Nitrile rubber gloves for handling the tester.
- Please adhere to any applicable OSHA regulations when handling gasoline.
- Dispose of the mixture according to local, state and federal regulations.

Refer to the attached procedure for testing the fuel composition of gasoline.

**WARRANTY INFORMATION**

Component damage, malfunctions, or any drivability problems verified to be caused by the use of fuels containing more than 10% ethanol (or other oxygenates with more than 2.8% oxygen by weight) will not be covered under BMW warranties as this is not considered a defect in materials or workmanship. Always document the results found on the vehicle repair order whenever performing this test.



# Service Information

Fuel Systems

B13 01 06

Page 1 of 2

May 2011

Technical Service

This Service Information bulletin supersedes SI B13 01 06 dated September 2006.

Changes to this revision are identified by a black bar.

## SUBJECT

### Alcohol Fuel Blends in BMW Vehicles

## MODEL

All with gasoline engines

## SITUATION

Fuel blends containing a high percentage (above 10%) of alcohol, mainly ethanol, are becoming more commercially available. Customers inquire about the possibility of using alcohol fuels (e.g., E85) in BMW vehicles.

## INFORMATION

Fuels containing up to and including 10% ethanol; or other oxygenates with up to 2.8% oxygen by weight, that is, 15% MTBE (methyl tertiary butyl ether); or 3% methanol plus an equivalent amount of cosolvent will not void the applicable warranties with respect to defects in materials or workmanship.

Usage of such alcohol fuel blends may result in drivability, starting, and stalling problems due to reduced volatility and lower energy content of the fuel. Those drivability problems may be especially evident under certain environmental conditions such as high or low ambient temperatures and high altitude.

Only specially adapted vehicles (FFV - Flexible Fuel Vehicles) can run on high alcohol fuel blends. BMW, for the various technical and environmental reasons explained below, does not offer FFV models.

Usage of E85 or any other high-alcohol content blend (e.g., E30) in BMW vehicles will cause various drivability complaints (cold-start problems, stalling, reduced performance, poor fuel economy, etc.); may cause excessive emissions; and may cause irreversible damage to engine, emission control and fuel delivery systems due to incompatibility of materials with alcohols.

### General Notes Regarding E85 Fuel

E85 fuel contains 85% (by volume) ethanol and 15% gasoline. Ethanol can be produced chemically from ethylene or biologically from grains, agricultural wastes, or any organic material containing starch or sugar. In the US, ethanol is mainly produced from corn and is classified as a renewable fuel.

Similar to gasoline, ethanol contains hydrogen and carbon with additional oxygen molecules built into its chemical chain. This chemical structure makes ethanol's burning process slightly cleaner than gasoline (lower tailpipe emissions).

On the other hand, due to lower carbon content, ethanol provides 27% less energy (for identical volume) than gasoline, resulting in reduced fuel economy of E85 vehicles (approximately 22% higher consumption). Increased fuel consumption requires appropriately enlarged fuel tank capacities (usually a 30% increase), and specific DME calibrations for E85 lower stoichiometric air/fuel ratio (10 compared to 14.7 for gasoline engines).

E85 fuel volatility is typically lower than gasoline (RVP 6-10 psi, compared to 8-15 psi for gasoline). Lower fuel volatility will reduce vehicle evaporative emissions, but it may cause cold-starting problems, especially with lower ambient temperatures.

Under certain environmental conditions, mainly lower ambient temperatures, ethanol separates from the gasoline/alcohol mixture and absorbs water. The ethanol-absorbed water molecules are heavier than gasoline or ethanol; they remain at the bottom of fuel tank and, when introduced into the combustion process, they tend to form an extremely lean mixture resulting in misfire, rough idle and cold-starting problems.

Certain materials commonly used with gasoline are totally incompatible with alcohols. When these materials come in contact with ethanol, they may dissolve in the fuel, which may damage engine components and may result in poor vehicle drivability.

Some metals (e.g., zinc, brass, lead, aluminum) become degraded by long exposure to ethanol fuel blends. Also, some nonmetallic materials used in the automotive industry such as natural rubber, polyurethane, cork gasket material, leather, polyvinyl chloride (PVC), polyamides, methyl-methacrylate plastics, and certain thermo and thermoset plastics degrade when in contact with fuel ethanol.

In order to safely and effectively operate a motor vehicle running on E85, the vehicle must be compatible with alcohol use. Some manufacturers have developed vehicles called FFV (Flexible Fuel Vehicle) that can operate on any blend of ethanol and gasoline (from 0% ethanol and 100% gasoline to 85% ethanol and 15% gasoline). Ethanol FFVs are similar to gasoline vehicles, with main differences in materials used in fuel management and delivery systems, and DME control module calibrations. In some cases, E85 vehicles also require special lubricating oils.

Aftermarket conversions of gasoline-powered vehicles to ethanol-fueled vehicles, although possible, are not recommended, due to internal materials and DME software incompatibility as well as the high costs of conversion.

In order to correctly diagnose various drivability complaints caused by fuel blends with a high level of ethanol content, refer to SI B13 05 10, Testing Fuel Composition for applicable tools and procedures.

### WARRANTY INFORMATION

Components damage/malfunctions or any drivability problems caused by the use of fuels containing more than 10% ethanol (or other oxygenates with more than 2.8% oxygen by weight) will not be covered under BMW warranties with respect to defects in materials or workmanship.



Mercedes-Benz

Mercedes-Benz USA, LLC

Ernst H. Lieb

President and CEO

June 10, 2011

The Honorable F. James Sensenbrenner, Jr.  
2449 Rayburn House Office Building  
Washington, DC 20515-4905

Dear Congressman Sensenbrenner:

Thank you for your letter regarding the Environmental Protection Agency's (EPA) decision to approve E15 for use in cars and trucks of Model Year 2001 or later. I appreciate the opportunity to respond to your inquiry.

Biofuels play an important part in strengthening our nation's energy security. But, like you, I am concerned over the EPA's decision to grant a waiver for E15 use in certain model year cars and trucks. A premature introduction of E15 into the marketplace will heighten consumer confusion and undercut studies already underway that aim to evaluate the effects of increased ethanol blends on vehicle parts and systems.

As you may know, numerous organizations across the United States have commented on the EPA's decision. Automakers are not alone in voicing their opposition. Among others, the auto industry is joined by organizations representing agriculture, small engine manufacturers, and small business owners in uniformly opposing this premature decision on ethanol.

Throughout its operations in the U.S., Mercedes-Benz has provided the most advanced engine and emission control systems to meet the requirements of the U.S. market. All current Mercedes-Benz fleet vehicles and series model lines up to MY 2011 are designed and tested for the use of E10. We have relied on this E10 blend wall in our vehicle design, and any ethanol blend above E10, including E15, will harm emissions control systems in Mercedes-Benz engines, leading to significant problems with certification, in-use testing, emissions performance and fuel economy.

Mercedes-Benz customers who misfuel with E15 will force the Company to face a host of product-liability actions. Although the Mercedes-Benz warranty in the owner's manual is clearly restricted to claims involving "proper maintenance," it would be impossible for the Company to prove that the vehicle damage is due to customer misfueling.

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P.O. Box 350  
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Phone (201) 573-0600  
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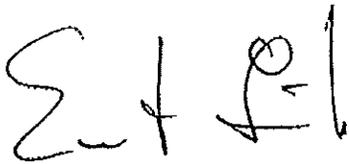
The deterioration, early wear, and aging process depend on how much and how often customers misfuel. Thus, Mercedes-Benz and other manufacturers will be forced into legal actions at a serious disadvantage.

More information on the compatibility of higher ethanol blends in vehicles must be obtained—we simply need more research on the possible negative effects this could have on engines and vehicle components.

At Mercedes-Benz, consumer satisfaction is paramount. Anything that might jeopardize our customer's perception of quality, performance, and safety of a Mercedes vehicle is of deep concern. For this reason, we have steadfastly opposed the EPA's decision to increase ethanol blends without full, comprehensive study. I am pleased that auto manufacturers have been joined by dozens of other associations and industries in voicing similar objections.

Congressman, thank you for your leadership on this issue. Again, thank you for contacting me.

Sincerely,

A handwritten signature in black ink, appearing to read "E. F. L." with a stylized flourish at the end.

# TOYOTA

## TOYOTA MOTOR NORTH AMERICA, INC.

WASHINGTON OFFICE

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FAX: (202) 822-0928

June 13, 2011

The Honorable F. James Sensenbrenner, Jr.  
Vice Chairman  
House Committee on Science, Space, and Technology  
Room 2449 Rayburn House Office Building  
Washington, DC 20515

Dear Vice Chairman Sensenbrenner:

I am writing in response to your June 1, 2011 letter to James Lentz concerning the Environmental Protection Agency's (EPA's) approval of E15 for use in 2001 model year and later vehicles.

Toyota strongly supports the development of alternative fuels to help reduce dependence on foreign oil and potentially reduce vehicle emissions. However, along with many other automobile manufacturers, Toyota is concerned about the EPA waivers approving use of E15 for 2001 model year and newer vehicles. As you may know, Toyota is a member of the Alliance of Automobile Manufacturers and the Association of Global Automakers, and these trade associations have joined with the National Marine Manufacturer's Association and the Outdoor Power Equipment Industries to challenge EPA's E15 waiver decisions.

Listed below are the questions from your letter along with Toyota's response:

- 1) Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?

RESPONSE: With the exception of the Flexible Fuel Vehicle (FFV) versions of our Tundra and Sequoia (which were designed specifically for the higher ethanol-based fuel), all Toyota, Lexus and Scion models on the road today have only been designed for fuels with up to 10% ethanol (E10). Moving from E10 to E15 represents a 50% increase in the alcohol content of the fuel compared to what the vehicles were designed to accept. Unfortunately, the data considered in connection with EPA's E15 waivers does not adequately determine the effect of this change on Toyota's legacy fleet. Accordingly, Toyota cannot recommend the use of fuel with greater than E10 (10% ethanol) for Toyota vehicles currently on the road, except for the FFV's.

- 2) Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?

RESPONSE: The vehicle owner's manual for Toyota, Lexus and Scion vehicles clearly recommends against using fuels with ethanol content greater than 10%, except for the FFV's, which can use fuels up to 85% ethanol. Our policy remains that we will not provide warranty coverage for issues arising from the misuse of fuels that exceed specified limits.

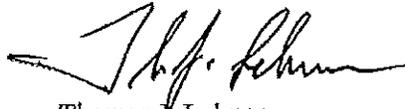
3) Will E15 affect the fuel efficiency of your engines?

RESPONSE: Because a gallon of ethanol has lower energy content than a gallon of gasoline, higher level ethanol blends will generally result in lower real-world vehicle fuel economy.

Toyota recognizes that ethanol and other renewable fuels will continue to play an important role in US energy policy. But, rather than pursue a retrospective solution that carries substantial risks for consumers, automakers, equipment makers and fuel providers, we need a prospective solution that provides adequate lead time for vehicle development, fueling infrastructure modifications and misfueling prevention measures. In support of this notion, and to avoid a continually moving target, Toyota stands ready and willing to develop E20 compatible vehicles in the future provided these issues are addressed.

We welcome the opportunity to work with key stakeholders in Congress, the regulatory agencies, the auto industry, the fuel industry and others to examine a practical pathway forward. Please contact me if you have any questions or need any additional information.

Sincerely,



Thomas J. Lehner  
Vice President, Government & Industry Affairs  
Toyota Motor North America

# VOLKSWAGEN

GROUP OF AMERICA

June 9, 2011

The Honorable F. James Sensenbrenner, Jr.  
Vice-Chairman, House Committee on Science, Space, and Technology  
U.S. House of Representatives  
2449 Rayburn House Office Building  
Washington, D.C. 20515-4905

MICHAEL LOHSCHELLER  
EXECUTIVE VICE PRESIDENT &  
CHIEF FINANCIAL OFFICER

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VOLKSWAGEN GROUP OF AMERICA, INC.  
2200 FERDINAND FORSCHE DRIVE  
HERNDON, VA 20171

Dear Congressman Sensenbrenner,

Thank you for your June 1 letter to Jon Browning inquiring about Volkswagen Group of America's position on EPA's decision to allow E15 for use in cars and trucks of model year 2001 or later. Mr. Browning is out of the country and has asked that I respond on his behalf. We appreciate your leadership on this issue and support your legislation to block the implementation of this rule. Below please find our responses to your questions.

***1. Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?***

Volkswagen does not have complete confidence that our vehicles will have no problems related to the use of E15. During the development of existing products no manufacturer tested for E15, since this fuel was not considered as a possible fuel when these vehicles were designed and tested. There is risk that a population of these existing vehicles could experience some type of problem due to E15.

Volkswagen agrees that the EPA did not conduct an adequate test program when E15 was considered and then approved for use in conventional vehicles. The auto and petroleum industry, through the CRC organization, conducted some limited testing of five vehicle areas where it was felt E15 could cause problems with some population of 2001 and newer vehicles. These five areas of concern are the following: base engine durability, catalyst durability, fuel system components, evaporative emissions systems and on board diagnostic (OBD) systems. The CRC testing indicated that some vehicles may be subject to problems related to E15 in the areas mentioned. It is possible that Volkswagen vehicles are included in the population of vehicles that could experience problems.

**2. Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?**

No. Our current warranty will not cover problems stemming from the use of E15. Our owner's manuals currently recommend the use of E10 fuels. We disagree with the EPA decision to allow E15 in 2001 and newer vehicles and our advice to our customers is to follow the recommendation found in the owner's manual.

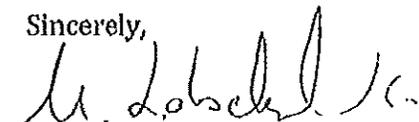
**3. Will E15 affect the fuel efficiency of your engines?**

Yes, E15 will affect fuel economy negatively. Ethanol has less energy content than gasoline and a higher percentage of ethanol will result in lower fuel economy. Ethanol has higher octane but there is no assurance the increased ethanol will raise the octane of the fuel, since the octane of the base gasoline can be lowered if a higher level of ethanol is used.

In summary, Volkswagen Group of America supports renewable fuels and increased use of ethanol, but disagrees with the EPA's approach to use a higher blend in older vehicles not designed to use this fuel. A more sensible approach is to set a higher level blend in the future with adequate lead time for the industry to design their vehicles to the prescribed higher blend level. The blend level should be set such that the RFS II requirements are fulfilled. The result would be vehicles designed for and optimized to a new higher ethanol fuel. This new fuel should also have a new requirement for a higher octane value that vehicle manufacturers can design to in order to optimize CO2 emissions. Finally, E10 should remain on the market for legacy product.

Again, thank you for recognizing this issue as problematic for manufacturers, and ultimately consumers. Please do not hesitate to contact our Vice President of Government Relations, Anna Schneider, with further questions.

Sincerely,



Michael Lohscheller

cc: Anna Schneider

# VOLVO

Volvo Car Corporation

The Honorable F. James Sensenbrenner, Jr., Vice-Chairman  
House Committee on Science, Space, and Technology  
Room 2449  
Rayburn House Office Building  
Washington, DC 20515-4905

Date	Telephone Infalling	Telefax	Our reference
2011-06-02			

Dear Vice-Chairman Sensenbrenner:

In response to your letter of June 1, 2011 regarding possible concerns of Volvo Car Corporation (VCC) and other constituents about EPA's recent approval of a blend of 15 percent ethanol (E15) for use in cars and trucks of Model Year 2001 or later, Volvo would like to offer the following answers to the questions posed in your letter.

1. Damage or wear from the use of E15 in model year 2001 and later Volvo vehicles:  
Volvo would expect accelerated engine wear and reduced durability over the lifetime of any vehicle engine subjected to E15 use. Field studies done at markets with rising blends above E10 has shown signs of premature ageing of rubber components in the fuel distribution system, which poses an increased risk regarding evaporative emissions. Volvo vehicles currently meet evaporative and exhaust emission performance and durability requirements using fuel containing not more than 10 percent ethanol (E10). While wear and tear at the federal useful life standard of 10 years/120,000 miles would already be concerning, California's Zero Emission Vehicle useful life standard of 15 years/150,000 miles would pose an even greater concern.

Volvo currently markets modified variants that can handle higher levels of ethanol than E10 in some markets

- Volvo has not currently scheduled to include variants in the U.S. market that can cope with higher ethanol concentrations than 10%
- We can not modify already produced cars to minimize the risk of the described customer and environmental problems.

2. Warranty coverage of potential problems stemming from the use of E15: Volvo owner's manual specifies a maximum 10 percent allowable ethanol content. The owner's manual also stresses the importance of proper vehicle care and maintenance, including the use of approved fuels, fluids, and lubricants.

Volvo's warranty, spelled out in a Warranty and Maintenance Records Information booklet, reserves the right to deny warranty coverage for damage caused by or under limited but specific circumstances, which expressly include:

*"The use of fuel and/or oil, or other fluids which do not meet the Volvo-approved standards as set forth in the Owner's Manual, Volvo Service Literature or [in this] booklet."*

However, it must also be understood that federal law puts the burden on the manufacturer to prove cause of emission failure. Therefore, any manufacturer would be prevented from arbitrarily assigning blame to the use of E15; such a determination must be supported by evidence. That kind of evidence can be elusive, given the uncertainty of histories of use of most motor vehicles.

3. E15's effect on vehicle fuel consumption: Ethanol contains less energy than gasoline. E10 already causes an increase in fuel consumption over unblended fuel. Volvo estimates that an increase in ethanol to 15 percent will degrade fuel economy and increase fuel consumption by a further 2.5 percent.

4. E15, an environmental aspect

Bringing a higher content of ethanol in the existing fuel market can be an opportunity to introduce alternative fuels. If focusing on the environmental aspect, the introduction of alternative fuels is in general a multistep process, the impact on the source of fuel and how it used.

Important environmental benefit is a reduction of the use of fossil fuels and replacing it with renewable fuel. In other words, it affects the CO2 balance positively.

The low-blend of ethanol, E10 and E15, causes fuel consumption to increase as described in paragraph 3 but CO2 emissions are expected to be unchanged or better when used. According to Volvo's calculations, CO2 emissions from E15 will be roughly equivalent to E10.

In this case, where the E15 is made available for all passenger car types from MY2001 designed to E10 but not E15, arises an environmental dilemma. The benefits when you utilize E10 to E15 to reduce CO2 the effect does not occur, it remains unchanged.

As described in paragraph 1, it is Volvo's engineering assessment that there is a likelihood of accelerated engine wear and rubber fuel system components are most likely to age prematurely, thus, adding an emission risk with respect to evaporative emissions.

Volvo's summation leads to the conclusion that by introducing the E15 for variants that are designed to E10, will add to the risk associated with respect to emissions while there is

**VOLVO**

Volvo Car Corporation

3 (3)

a no significant improvement in CO2 when using E15 instead of E10. Thus arise the conclusion that the risks related to emissions are greater than the benefits in terms of CO2 when using low-blend E15 for variants that are designed to E10. Thank you for considering our views. If you have any questions about the information, please contact Katherine Yehl at [kyehl@volvocars.com](mailto:kyehl@volvocars.com) or (202) 412-5935.

Sincerely,



Doug Speck  
President and CEO  
Volvo Cars of North America, LLC



## HYUNDAI MOTOR COMPANY

Washington Office  
1660 L Street, NW, Suite 620  
Washington, DC 20036  
TEL: (202) 296-6550 FAX: (202) 296-6436

June 30, 2011

The Honorable F. James Sensenbrenner  
Vice-Chairman  
Committee on Space, Science and Technology  
United States House of Representatives  
2449 Rayburn House Office Building  
Washington, DC 20515-4905

Dear Vice-Chairman Sensenbrenner:

Thank you for your June 1, 2011 letter to John Krafcik, President, Hyundai Motor America ("Hyundai") regarding the Environmental Protection Agency's (EPA) partial waiver decisions permitting the use of gasoline blended with up to 15 percent ethanol (E15) in 2001 model year (MY) and newer passenger cars and light-duty trucks.

Hyundai recommends that before any new fuel is introduced into the marketplace, comprehensive, independent and objective scientific testing be completed to show that the fuel will not increase air pollution, harm engines, or endanger consumers. Further, Hyundai recommends the establishment of adequate protections to prevent misfueling.

Your letter asks for responses to several questions regarding E15. The questions and Hyundai's responses are shown below.

1. Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly for use of E15?

*The EPA tests failed to conclusively show that the vehicles will not be subject to damage or increased wear. Hyundai therefore has no basis to conclude that its vehicles will not be damaged by or wear more quickly due to the use of E15.*

June 30, 2011

Page 2

2. Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?

*Hyundai owner's manuals state: "Vehicle damage or drivability problems may not be covered by the manufacturer's warranty if they result from the use of gasohol containing more than 10 percent ethanol..." The manuals also state "Do not use gasohol (gasoline-ethanol mixture) containing more than 10 percent ethanol..."*

3. Will E15 affect the fuel efficiency of your engines?

*E15 will negatively affect the fuel efficiency of Hyundai engines because ethanol has lower energy content than gasoline.*

Thank you for the opportunity to share our recommendations and to respond to your questions. If you have any questions about this information, please me at [kmhennessey@hyundai-dc.com](mailto:kmhennessey@hyundai-dc.com) or at 202-296-5550.

Sincerely,



Kathleen M. Hennessey  
Vice President -- Government Affairs

cc: The Honorable Ralph Hall  
Chairman, Committee on Science, Space and Technology

The Honorable Eddie Bernice Johnson  
Ranking Member, Committee on Science, Space and Technology

John Krafcik  
President, Hyundai Motor America



Andrew J. Tavi  
VP Legal and Government Affairs,  
and General Counsel

NISSAN NORTH AMERICA, INC.

Corporate Office  
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Franklin, TN 37067  
Mailing Address: P.O. Box 685001  
Franklin, TN 37068-5001  
Telephone: 615.725.2252  
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June 17, 2011

The Honorable F. James Sensenbrenner, Jr.  
Vice Chairman  
House Committee on Science, Space and Technology  
United States House of Representatives  
2449 Rayburn House Office Building  
Washington, DC 20515-4905

Dear Vice Chairman Sensenbrenner:

We appreciate receiving your letter dated June 1, 2011 regarding EPA's two partial waiver decisions that permit the sale of gasoline containing up to 15 percent ethanol (E15) for 2001 model-year (MY) and newer passenger cars and light trucks. We believe that increasing the allowable ethanol content in gasoline by 50 percent will have unintended consequences for auto manufactures, consumers, fuel suppliers and distributors. Nissan's primary concern about these E15 waivers is the overriding need for consumer safety and satisfaction. Specifically, your letter asks for responses to the following three questions. Our responses are provided below.

1. Are you confident that your cars and trucks from model year 2001 and later will not be damaged by or wear more quickly from use of E15?

No, we are not at all confident that there will not be damage to MY 2001 and later vehicles that are fueled with E15. In our view the record fails to demonstrate that motor vehicles (other than FFVs) would not be damaged and result in failures when run on E15.

2. Will your current warranty cover potential problems stemming from the use of E15 in cars and trucks from model year 2001 and later?

No. Nissan vehicles covered by the waiver were designed to use a maximum of E10. The direction in the owner manuals of Nissan vehicles reflects the fact that they were not designed to run on E15. EPA regulations allow manufactures to deny warranty coverage for vehicles damaged due to mis-fueling (based on the owner's manual instructions). We are encouraging Nissan vehicle owners to continue to consult their owner's manuals for information regarding the appropriate fuel for the vehicles.

3. Will E15 affect the fuel efficiency of your engines?

Yes. A gallon of ethanol has lower energy content than a gallon of gasoline. Therefore, any increase in ethanol content will necessarily degrade fuel economy.

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The Honorable F. James Sensenbrenner  
June 17, 2011  
Page 2

Thank you for considering our views. If you have any questions about this information, Please contact Tracy Woodard at [tracy.woodard@nissan-usa.com](mailto:tracy.woodard@nissan-usa.com) or 615-725-2377.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew J. Tavi". The signature is fluid and cursive, with a prominent initial "A" and "J".

Andrew J. Tavi  
Vice President, Legal and Government Affairs,  
and General Counsel

CC: The Honorable Ralph Hall  
Chairman, Committee on Science, Space and Technology

The Honorable Eddle Bernice Johnson  
Ranking Member, Committee on Science, Space and Technology