



**July 20, 2012 Open Meeting, South Dakota Department of Public Safety  
Alliance of Automobile Manufacturers  
Testimony Opposing Legalized Sale of 85 (AKI) Octane Gasoline**

My name is Bill Wuebkenberg, and I am the Senior Engineer for Fuel Regulatory Affairs at Mercedes-Benz Research & Development North America. I am here speaking as a member of the Alliance of Automobile Manufacturers. I would also like to introduce Val Ughetta and Renee Wadsworth of the Alliance staff.

The Alliance is the leading advocacy group for the auto industry, representing 77% of all car and light truck sales in the United States. Members include the BMW Group, Chrysler Group LLC, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of America and Volvo Cars North America.

Alliance members appreciate Governor Daugaard's efforts to address illegal and mislabeled sale of 85 octane gasoline in the State. We also support his outreach through notice and comment rulemaking, and encourage an open and deliberative process on this topic of great importance, not only in South Dakota but nationwide.

Automakers strongly oppose the sale of 85 and 86 octane gasoline in South Dakota or in *any* U.S. State, because it is incompatible with both current and emerging engine technology. All vehicles sold today in the U.S. require the use of fuel with a minimum of 87 AKI (antiknock index) octane or higher, as reflected in the owner's manuals. While we understand the factors that led to the consideration of a temporary, emergency rule to assure interim fuel supply for consumers in the very western part of the State, the auto industry urges South Dakota **not** to legalize 85 octane gasoline.<sup>1</sup>

Allowing 85 octane gasoline in South Dakota is an unnecessary and unworkable step backward in fuel policy. In fact, fueling with 85 octane gasoline poses risks to engine and emission control system durability from thermal stresses, due to retarding of spark ignition events to avoid detonation (also known as knocking), damage that can occur if knocking cannot be completely eliminated, as well as overall cumulative damage with chronic use. Misuse in vehicles that require premium fuel can pose a greater and more immediate risk of damage from 85 octane gasoline. Many manufacturers' new vehicle limited warranties do not extend coverage to damage associated with improper fueling.

---

<sup>1</sup> In the event of an interim emergency period allowing sale of 85 octane, at a minimum, the Alliance calls for a mandatory, prominent retail pump consumer label that identifies the risks and incentivizes and directs the consumer to check the vehicle owner manual to see if this fuel is compatible with his or her vehicle and warranty.

Even more critical, 85 octane gasoline is wholly incompatible with advanced engine technologies that will appear in the marketplace in the near future. These technologies are necessary to help meet new federal standards for better fuel economy and lower greenhouse gas emissions. These highly advanced fuel delivery, engine control and exhaust after-treatment systems are designed to run in a precisely engineered and optimized manner to meet challenging new environmental and vehicle performance specifications. One simply cannot achieve these endpoints and run on out- of-date, lower octane gasoline, particularly on a prolonged use basis. It is necessary to acknowledge that fuel is not merely a customer commodity, but an integral part of the vehicle system as a whole. Engineering to protect against the potential use of a low octane fuel in a vehicle developed for 87 AKI octane or higher reduces the optimized functional capabilities of the vehicle. In short, consumers *already* need, and will continue to need, access to predictable, nationally consistent supplies of minimum 87 AKI and higher rated octane fuels.

Using the manufacturer-recommended level of octane contributes to engine efficiency and fuel economy as developed by the manufacturer and certified per US NHTSA and EPA. It also contributes to the consumer's confidence in the power to accelerate, pass, and handle loads on the vehicle. Finally, using manufacturer-recommended octane also contributes to the durability of the vehicle, including the vehicle exhaust catalyst, by avoiding thermal and other stresses on the equipment. Lower octane rated fuel can degrade emission controls. These are factors that should be considered against the cost to refiner/suppliers, or at the pump.

The Alliance urges South Dakota not to promulgate any permanent octane regulations to reduce the minimum allowable octane rated fuels for sale across the State. On June 26, 2012, ASTM International, a prominent international standards organization, announced it is undertaking a technical review of its automotive gasoline standard (D4814). The current version's non-binding appendix information is explicit that the octane de-rating language (for high altitudes only) pertains to "pre-1984" vehicles. It is appropriate for South Dakota to take into account the updated outcome from this ASTM process, as ASTM standards are frequently incorporated by reference into state and also federal law.

As noted in the South Dakota Attorney General's recent opinion letter, current South Dakota law on octane is based on recommended standards from the National Conference of Weights and Measures (NCWM) National Institute of Standards and Technology (NIST) Handbook 130, as well as ASTM. NCWM has been meeting this week. It too will be reviewing its octane requirement recommendations. Access to such expert technical consideration will be valuable for South Dakota and the Rocky Mountain and contiguous states, as well as for the federal government.

Finally, South Dakotans deserve a clear and detailed record specifying the economic arguments from refiners in support of legalizing sale of 85 octane gasoline, since it is technically feasible for refiners to supply 87 octane gasoline. Local refiners have been and remain capable of providing 87 and also higher premium octane grades of gasoline. It is very important in developing South Dakota's regulatory policy to clearly separate out technical feasibility from economic considerations. First, it is necessary to analyze what is technically feasible in making and distributing fuel products for the relevant refiners and suppliers supporting sale of 85 octane fuel, especially in an environment when a high-octane ethanol blending component is being used

in 10% by volume concentrations in creation of the final gasoline blend. Second, there needs to be an evaluation of their specific economic factors or contract obligations claimed to directly constrain production or distribution of 87 versus 85 octane. Third, there should be separate acknowledgment and consideration of the complex, variable factors affecting fuel cost to consumers at the pump, which may be independent of refiner/supplier costs. One question is how the economics would change if *all* the surrounding states had a minimum 87 octane grade for regular fuel.

In closing, for the same reasons that the auto industry has consistently argued for one national standard for tailpipe emissions, fuel economy and related greenhouse gas emission reductions, a patchwork of state-specific fuels that are not compatible with the vehicle technologies consumers will come to rely upon is not sustainable. Other fuel parameters such as lead, manganese, sulfur and oxygenates have had to change, with vehicle technology. Similarly, federal legislation requiring the use of certain volumes of alternative fuels, including ethanol, is accommodated in the marketplace, even by small refiners. In this regard, low octane fuel suppliers need to transition and adjust their product for valid vehicle needs, as well as prepare for potential future increases in minimum octane rating. Consumers deserve a nationally consistent minimum octane grade that is compatible with the recommendations of all automakers. In the absence of federal regulation to date, individual states also need to work toward that outcome.

Fuels and vehicles are a system that requires mutual compatibility. Our goal to eliminate low octane grades [ $<87$  AKI] is shared not only by Alliance members and members of Global Automakers, but also Large Engine/Truck Manufacturers, Non Road Equipment Manufacturers, and other stakeholders as well. Thank you for holding this meeting, and considering the auto industry's views. I've included contact information in the written testimony. I would be happy to take your questions.

\*\*\*

Bill Woebkenberg MBRDNA [william.woebkenberg@daimler.com](mailto:william.woebkenberg@daimler.com) 734 997 2030

Valerie Ughetta Alliance of Automobile Manufacturers [vughetta@autoalliance.org](mailto:vughetta@autoalliance.org) 202 326 5549

Renee Wadsworth Alliance of Automobile Manufacturers [rwadsworth@autoalliance.org](mailto:rwadsworth@autoalliance.org) X5526

\*\*\*



**Alliance of Automobile Manufacturers**  
**Proposed Rule on the Sale of 85 Octane Gasoline**  
**July 20, 2012**  
**Pierre, SD**

**1. Automakers oppose the sale of 85 and 86 octane gasoline in any State**

Automakers support Governor Dugaard's efforts to address illegal and mislabeled sale of 85 octane gasoline in the State. Today's cars and light trucks are not designed to be fueled in any environment by anything less than 87 octane gasoline. Use of anything less than 87 octane may result in loss of power, loss of fuel efficiency, increased emissions, and reduced vehicle durability.

Auto manufacturers recommend the use of 87 octane fuel or higher for every model produced, and in many cases warranties require the use of 87 octane fuel or higher. Prolonged use of anything less than 87 octane can cause serious engine and emissions system damage and may affect warranty coverage. Consumers deserve to know the risks of prolonged use of sub-regular grade fuel.

**2. Use of sub-regular grade octane will become increasingly problematic as new vehicle technologies are implemented to meet new federal fuel efficiency and emissions standards**

Fuel is not merely a customer commodity, but an integral part of the vehicle system as a whole. Engineering to protect against the potential use of a low octane gasoline reduces the optimized functional capabilities of the vehicle needed to meet new standards. Consumers need access to predictable, nationally consistent supplies of minimum 87 AKI and higher rated octane fuels.

**3. South Dakota consumers have the right to make an informed choice when it comes to fuel purchases.**

This includes the use of accurate, descriptive labeling at all points of sale. Automakers support State efforts to ensure all fuels are accurately labeled at point of sale to guarantee consumers are receiving the fuel product they believe they are purchasing. Pump labels should incentivize and caution consumers to check their owner's manual to ensure they are using the correct fuel.