



CENTRAL NEWS[®]

Cummins Endorses Fuel Additives

By Blaine Ballentine

For many years we have been frustrated by diesel engine manufacturers that would lobby for better fuels containing fuel additives through their trade organization, Truck and Engine Manufacturers Association¹, and then recommend against fuel additives in the aftermarket. That is changing.

Cummins Recommendation

Cummins, the world's largest diesel engine manufacturer, stated in a press release in May of this year², that "In recent years diesel fuel quality has become increasingly important.." and recommended two products from Power Service. Cummins endorses "Power Service Diesel Kleen and Cetane Boost" for temperatures above 30° F and "Power Service Diesel Fuel Supplement and Cetane Boost" for temperatures below 30° F. So, Cummins is not necessarily

recommending the best fuel additive, but at least they are recommending aftermarket fuel additives.

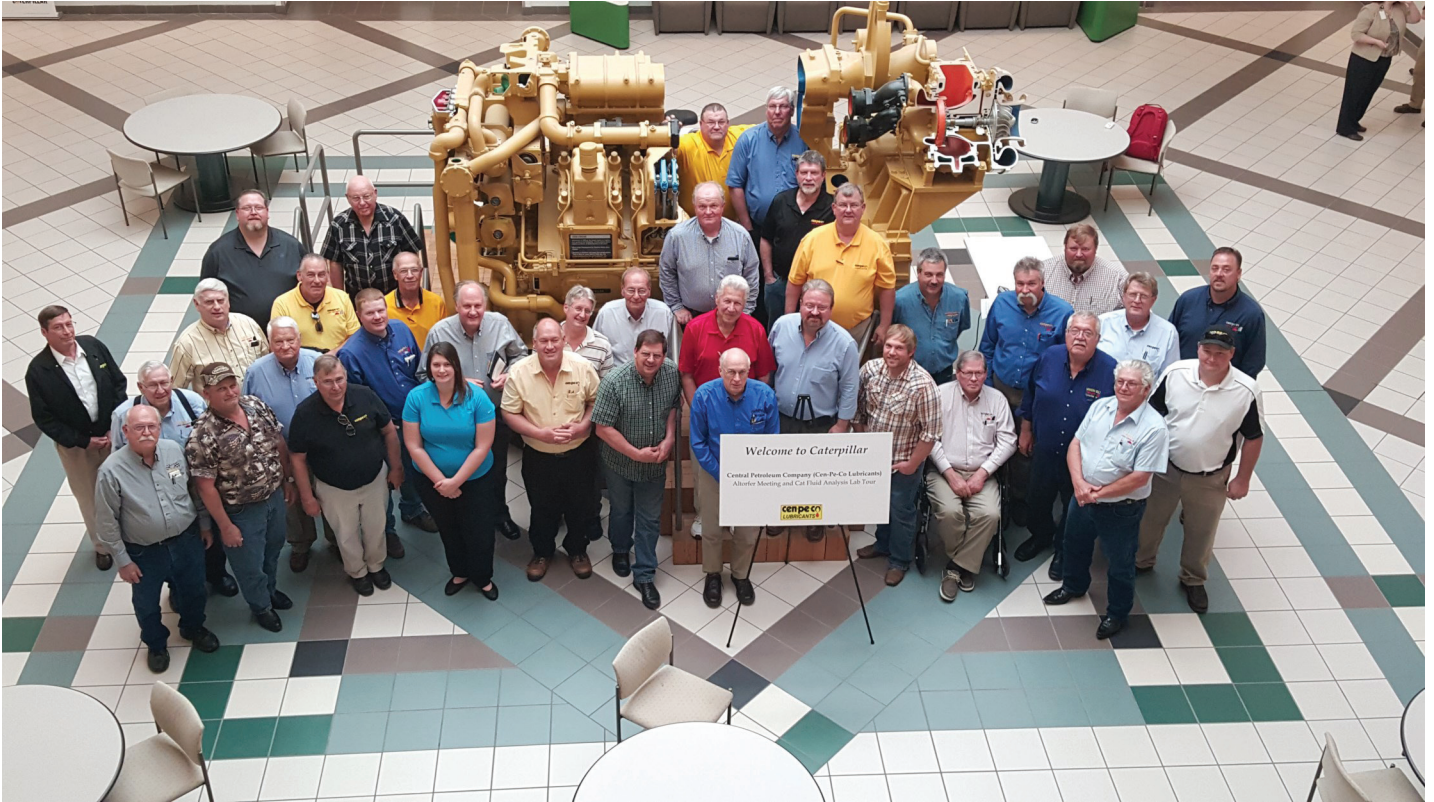


Comparison

Let's compare Power Service Diesel Kleen and Cetane Boost with CenPeCo DieselMax. Both products claim to clean injectors, boost cetane, boost power, improve fuel economy, and restore lubricity to ULSD (Ultra Low Sulfur Diesel).

The difficult part for consumers is

Spring Sales Meeting at Cat



Attendees standing in front of and inside of a Cat 3600 engine.

Denny Fler started using his local Caterpillar dealer, Altorfer Cat, for oil analysis a few years ago, and found their speed and quality to be superior. Altorfer input the information and prepared the samples, but the laboratory work was performed by Caterpillar in Peoria, IL. The results were sent electronically back to Altorfer's Cedar Rapids location where the analyst, Thad King, analyzed the test results for Altorfer's 19 stores.

Thad found that Denny was telling the truth about Cen-Pe-Co's better performance and started using our Extreme Duty in his diesel pickup. Through this relationship, we received an invitation to hold a sales meeting at Altorfer's Peoria dealership and shuttle to tour Caterpillar's lab, which is the world's highest volume oil analysis lab.

There was a lot of interest among our salesmen who came from Illinois, Indiana, Iowa, Wisconsin, and Missouri to attend. We broke into

groups to tour the lab, learned how to pull a sample from an oil port with a suction gun, and listened to a couple of lectures. The people leading the discussions impressed us with their great depth of knowledge



One of the topics that bears repeating here is quality control. Quality control for samples is

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primarily in your hands—in the way that you draw the sample and how completely you fill out the form.

Analysis requires a representative sample for the results to be meaningful. A sample drawn from a cold engine, or one drawn five minutes after shut down will not provide the same information as a sample drawn from a hot engine immediately after



shut down.

Quality analysis also includes the information submitted with the sample. Cen-Pe-Co S-3 Oil has a different additive profile than CenPeCo Extreme Duty Oil. Various engines have different wear patterns and different alarm limits. A normal amount of soot in one engine may throw a red flag for another. Obviously, you would view the results of a sample run 500 hours differently than a sample run 50 hours. Once the testing is complete, they need a place to send the results, but you would be surprised at how many samples arrive with no name or address.

The more completely you fill out the form, the better the analyst will be able to interpret your results. Please complete the form when submitting samples.

The meeting was a rewarding experience. We are appreciative of both Altorfer and Caterpillar for making it happen.

In The News

The API conducts an annual audit to ensure their licensees in the API Engine Oil Program meet specifications. Results of the audit from 2015 were reported this spring.

Samples of 700 gasoline engine oils were collected—about 450 from packaged products and about 250 from bulk. They were tested for viscosity at 100° C, High Temperature High Shear viscosity, volatility, cold cranking, pumpability, foaming, filterability, rust, and shear stability, in addition to elemental analysis.

Over one-fourth of them failed—23% of the packaged oils and 33% of the bulk oils. Most of those oils passed the bench tests, but 90% of the failures were because of formulation discrepancies or questionable additive treat rates.

The API also sampled 110 diesel engine



oils—roughly 80 packaged oils and 30 bulk oils. The results were even worse than for the gasoline engine oils with 29% failing.

Again, bulk oils were more likely to fail than packaged oils with 45% of the bulk oils failing compared to 23% of the packaged oils. Like the gasoline engine oils, the predominant reason for failure was formulation discrepancies or additive treat rates.

With such high failure rates, we are left to speculate that one fourth of the engine oils are supplied by companies that undertreat, switch additive packages, and/or are careless about cross contamination. Perhaps the bulk oils have a higher failure rate due to handling issues. Consumers need to purchase from reputable and conscientious companies, because a large portion of companies are apparently cutting corners.

trying to separate product claims from reality, which unfortunately do not always align. We recently had a representative of one of the leading fuel additive chemical manufacturers visit our Walcott facility. He said that his employer had gone to a leading parts store and purchased every fuel additive on the shelf. Testing determined that 84% of the additives did not support the claims on their labels.

Testing is expensive. The HFRR test for diesel fuel lubricity is more than any consumer wants to spend, and like most boundary lubrication tests, suffers from variability. Of course, injector cleanliness testing is really expensive.

Cetane testing is a little more reasonable, but for our comparison, may not be necessary. The most efficient cetane improver is 2-ethylhexyl nitrate, which is sometimes displayed as 2-ethyl hexan-1-ol or something similar. It is a hazardous material that shows up on SDS (Safety Data Sheets), and the SDS for both products are available online.

Apparently, Power Service Diesel Fuel Supplement and Cetane Boost is available in three concentrations—a 1:400 concentration ratio, a 1:1000 concentration ratio, and a 1:1500 concentration ratio. We will compare CenPeCo DieselMax, which treats at 1:1000 rate, to Power Service's 1:1000



concentration.

Power Service's product shows a concentration of cetane improver of 1 to 5% on its SDS³. The SDS for DieselMax shows a concentration of 40 to 70%⁴. At the very least, DieselMax has eight times the amount of cetane improver as Power Service Diesel Fuel Supplement and Cetane Boost, and it is likely a much higher multiple.

Summary

So, this is all good news for us. The world's largest diesel engine manufacturer is recommending fuel additives and CenPeCo DieselMax is far more effective at raising cetane than the product they endorse.

Reference

1. "Worldwide Fuel Charter," Truck and Engine Manufacturers Association, 9/2013, truckandenginemanufacturers.org
2. "Cummins, Inc. Officially Recommends Power Service Diesel Kleen +Cetane and Diesel Fuel Supplement +Cetane Boost For Optimized Engine Performance" <http://investor.cummins.com/phoenix.zhtml?c=112916&p=irol-newsArticle&ID=2271845,5/10/17>
3. Power Service Products, Inc. Safety Data Sheets, Diesel Fuel Supplement and Cetane Boost, 9/28/15, p3.
4. CenPeCo DieselMax Safety Data Sheet, Central Petroleum Company, 8/14/15, p2.