Testing the waste gas emissions of a Mercedes Benz Turbo Diesel under different driving conditions under 40 CFR Part 86 of the Federal Test Guide

The following is a brief description of the test procedure and the basic process involved. For exact procedures please reference the Federal Test Guide - CFR -40 Part 86- EPA 78. The EPA uses this test to analyze and measure emissions from diesel fueled motor vehicles. The CVS/FTP tests consist of three phases that are modeled after normal on-road vehicle usage. This requires the vehicle to perform: a cold start (minimum 12 hours of no operation of the vehicle engine), starts and stops (similar to vehicle operations when approaching a stop sign, braking until reaching a full stop, and accelerating from a stopped position), hills (ascent of 10%+ grades), city driving (accelerating, braking, coasting, and complete stops), and highway- driving (accelerating, maintaining speeds of 55+ miles per hour for set periods of time, coasting, acceleration similar to passing at speeds above 45+ miles per hour). Samples of the emissions are collected in bags and analyzed for THC, CO, NOx, CO2 and fuel economy. All personnel, tests, testing equipment, and testing facilities used for these tests are both EPA and California Air Resource Board (CARB) certified. A third party (California Environmental Engineering) with no affiliation or business relationship with the company or supplier of the oil catalyst conducted these tests.

TEST REVIEW

24 Drain existing fuel in test vehicle
25 Fill tank to 40% with specified test fuel (test diesel)
26 Run Prep cycle
27 12- hour controlled soak
28 Run CVS/FTP test for baseline (1)
29 Run second Prep cycle
30 12 - hour controlled soak
31 Run second CVS/FTP test for baseline (2)
32 Run third Prep cycle
33 12 - hour controlled soak
34 Run third CVS/FTP test for baseline (3)
35 Make sure the three baselines are repeatable within a 10% tolerance
36 Add liquid oil catalyst (**CerBond™**)
37 Drive 100 miles using AMA — Route
38 Reconstitute test fuel to 40%
39 Run Prep cycle
40 12- hour controlled soak
41 Run CVS/FTP test with oil catalyst (1)
42 Run Prep cycle
43 12- hour controlled soak
44 Run CVS/FTP test with oil catalyst (2)
45 Compare averages of baseline results without catalyst, to average of results *with* liquid oil catalyst.

TEST SUMMARY
6 Preps
6 CVS/FTP with Bags

TEST VEHICLE
1984 Mercedes Benz Turbo Diesel
Mileage: 440,000 Condition: Poor
V.I.N. # WDBAB33A8EA178601

TEST FACILITY
California Environmental Engineering
2530 South Birch Street
Santa Ana, CA 92707

TEST RESULTS

The test results were extremely positive in terms of reduction of particulate matter and tailpipe emissions. After treating the vehicle with the **CerBond™** oil catalyst, test results indicate reductions across the board. The reductions and end results for this vehicle are as follows:

46 Total Hydrocarbons (HHC) — reduction of 10.6%
* Measured as grams/mile (gr/m)
47 Carbon Monoxide (CO) — reduction of 4.9%
* Measured as grams/mile (gr/m)
48 NOx reduction of 2.3%
* Measured as grams/mile (gr/m)
49 Fuel Economy— increase of 1:1%
* Measured as miles per gallon (mpg)
50 Particulate matter (PM) — reduction of 18.1%
* Measured as grams

These results indicate that by using the oil catalyst in the oil crankcase of diesel powered vehicles, significant reductions in particulate matter and emissions can be achieved. It should be noted that this vehicle was in such poor condition prior to testing that it was retired to a junk yard shortly after testing was performed. [Worst case testing conditions, proving the effects of **CerBond™** even on worn out engines needing major repairs prior to testing]. **CerBond™**'s positive affects can be shown in any engine, regardless of condition, including, those deemed "Junk".