



DIESEL FUEL ADDITIVE - CC™

(Patent Pending)

Product Description and Benefits

The Technology

Diesel Fuel Additive – CC™ is a blend of specially prepared 30-50 nm detonation synthesis nanodiamonds (“DSND”) with graphene shell in a semisynthetic petroleum carrier. It exploits catalytic properties of carbon. These include a surface area to weight ratio up to 400 meters² per gram and active (charged) surface.

When added to diesel fuel, nanodiamonds are dispersed in the air/fuel mixture where they act as a catalyst to improve combustion efficiency. The catalytic action of DSND breaks down the NO_x created in the combustion process. This frees oxygen (O₂), improving the burning of fuel, reducing the quantity of undesirable combustion by-products and increasing fuel economy. As a result:

- The production of soot is significantly reduced along with emissions of NO_x, CO and hydrocarbons.
- The load on the soot capture system is reduced along with the consumption of fuel to eliminate collected soot.
- Utilization of Diesel Exhaust Fluid (DEF) to reduce NO_x decreases by more than 30%.
- Fuel economy increases dramatically.

Testing of Diesel Fuel Additive – CC™

These improvements were realized at dilutions of 1.6 to 1.8 ml per gallon of diesel fuel:

| Average NOX Improvement Across All Load Points | |
|--|----------|
| Additive Level | % Change |
| 1.6 ml/gal | 30.2% |
| 1.8 ml/gal | 34.3% |

| Average Improvement of Emissions Changes Across All Load Points | | | |
|---|-------------------|-----|-------|
| Additive Level | CO ₂ % | CO% | HC% |
| 1.6 ml/gal | 5.3 | 3.0 | 10.2 |
| 1.8 ml/gal | 5.4 | 0.1 | -19.2 |

| Average Fuel Economy Improvement Across All Load Points | |
|---|--------------------------|
| Additive Level | Fuel Economy Improvement |
| 1.6 ml/gal | 32.4% |
| 1.8 ml/gal | 34.4% |

Addressing the Diesel Particulate Problem

Diesel engines produce a large quantity of soot. To control emission of soot diesels are equipped with a Diesel Particulate Filter (“DPF”). The accumulated soot must be burned off regularly in a process called “Regeneration”. This consumes fuel and for certain vehicles it requires the vehicle to be parked so that vehicle and driver are unproductive for a period of time.

According to the Ryder System blog:

“Here are the two ways drivers can regenerate diesel engines.

- ***Regeneration while driving (passive regeneration):*** Vehicles whose routes enable them to run at high speeds typically regenerate on their own. If the vehicle still needs to be regenerated, the driver can simply drive the vehicle at uninterrupted highway speeds for 20 to 30 minutes and the engine will automatically regenerate.
- ***Parked regeneration (active regeneration):*** Vehicles used for urban deliveries typically run at low speeds and may not produce exhaust temperatures that are high enough to regenerate the engine during operation. These vehicles typically require a timely parked (active) regeneration cycle to prevent permanent damage.

A parked regeneration typically entails pulling the vehicle over to the side of the road, turning off all accessories, putting the transmission in neutral, applying the parking break, pressing and releasing the clutch pedal and pressing and holding the regen button on the dashboard until the RPM increases. The process takes from 20 to 40 minutes. When the regeneration is complete, the lights on the dashboard go out.”

For vehicles that require parked regeneration, use of Diesel Fuel Additive - CC™ may also increase the number of hours per day the vehicle can be utilized. This saves operator time and, for large operations, may reduce quantity of vehicles and operators needed. Typical are vehicles used primarily in city driving and certain utility vehicles such as skid loaders (used extensively in landfill operations) or certain construction or agricultural equipment.

Use of Diesel Fuel Additive-CC™ reduces particulate production by more than 30% and is an important strategy for increasing operating time for these vehicles and drivers. It also reduces fuel consumption in all diesel vehicles equipped with a DPF.

Product Availability

Diesel Fuel Additive – CC™ is available in barrels for use in centralized diesel fuel tanks and in bottles for use by over-the-road trucking and vehicles that re-fuel at filling stations. A mobile dispensing system is expected to be available by 3Q2017.

Application

One (1) barrel of Diesel Fuel Additive – CC™ treats 125,000 gallons of diesel fuel at a concentration of 1.6 ml/gal.

Diesel Fuel Additive – CC™ is added to the vehicle fuel tank with each fill-up. Diesel Fuel Additive – CC™ should be added in the ratio of 1.6 to 1.8 ml per gallon of diesel fuel with each re-fueling.

Diesel Fuel Additive – CC™ can be added to the fuel supply of any diesel engine. This includes both vehicular and non-vehicular engines. Typical applications include:

- Trucks
- Buses
- Locomotives
- Generators
- Taxis
- Off Highway Equipment such as skid loaders, excavating equipment, mining equipment and construction equipment
- Passenger vehicles

Using Diesel Fuel Additive - CC™

Centralized Fuel Tank

For the initial Diesel Fuel Additive – CC™ fill begin with the capacity of the fuel for a full tank of diesel fuel (in gallons) and, before filling with diesel fuel, add 1.6 ml Diesel Fuel Additive – CC™ multiplied by the tank capacity in gallons, then fill the tank with diesel fuel.

For subsequent tank fills, measure (or calculate) the remaining fuel in the tank and subtract it from the total tank capacity. This produces the number of gallons of diesel fuel to be added. Multiply the quantity of gallons of diesel fuel to be added by 1.6; this produces the number of milliliters of Diesel Fuel Additive – CC™ required. Add the required quantity to the fuel tank and then fill with diesel fuel.

On-the-road Fill-up

Use our measured dispensing container. For the initial use, SHAKE WELL for 20-30 seconds. Add sufficient Fuel Additive - CC™ to your fuel tank to treat a FULL TANK and then fill-up your tank completely. If multiple tanks are filled, repeat this action for each tank. For example, if the vehicle has a 50 gallon diesel tank, add 80 ml of Diesel Fuel Additive – CC; if it has two 50 gallon tanks, add 80 ml of Diesel Fuel Additive – CC™ to each, then fill the tanks.

For subsequent uses, Fuel Additive-CC™ should be added based upon the additional fuel added to your tank, for example if you added 10 gallons you need 16 ml of Fuel Additive-CC™.

IF YOU ARE FILLING MULTIPLE TANKS, PUT FUEL ADDITIVE – CC™ IN EACH TANK.

You may find it convenient to add a specific amount of fuel each time you fill-up so that you add the same amount of Diesel Fuel Additive – CC™ each time.

WHEN USED AS DIRECTED, YOUR SATISFACTION IS UNCONDITIONALLY GUARANTEED OR YOUR MONEY BACK. FOR ADDITIONAL INFORMATION OR A [NO-RISK TRIAL](#) CALL US AT (248) 529-3873. OUR RESEARCH REPORT IS AVAILABLE TO QUALIFIED ORGANIZATIONS.

Diesel Fuel Additive CC™ – Additive Dispensing Table

Diesel Fuel Additive - CC™ performs best in a concentration of 1.6 to 1.8 ml per gallon of fuel. The following is the manufacturer’s recommendation at 1.6 ml per gallon. **Do not exceed 1.8 ml/gal.**

| Gallons of Fuel | Milliliters of Additive | Ounces of Additive |
|-----------------|-------------------------|--------------------|
| 10 | 16.0 | 0.47 |
| 11 | 17.6 | 0.50 |
| 12 | 19.2 | 0.60 |
| 13 | 20.8 | 0.60 |
| 14 | 22.4 | 0.70 |
| 15 | 24.0 | 0.70 |
| 16 | 25.6 | 0.80 |
| 17 | 27.2 | 0.80 |
| 18 | 28.8 | 0.90 |
| 19 | 30.4 | 0.90 |
| 20 | 32.0 | 0.90 |
| 21 | 33.6 | 1.00 |
| 22 | 35.2 | 1.00 |
| 23 | 36.8 | 1.10 |
| 24 | 38.4 | 1.10 |
| 25 | 40.0 | 1.20 |
| 26 | 41.6 | 1.20 |
| 27 | 43.2 | 1.30 |
| 28 | 44.8 | 1.30 |
| 29 | 46.4 | 1.40 |
| 30 | 48.0 | 1.40 |
| 31 | 49.6 | 1.50 |
| 32 | 51.2 | 1.50 |
| 33 | 52.8 | 1.60 |
| 34 | 54.4 | 1.60 |
| 35 | 56.0 | 1.70 |
| 36 | 57.6 | 1.70 |
| 37 | 59.2 | 1.80 |
| 38 | 60.8 | 1.80 |
| 39 | 62.4 | 1.80 |
| 40 | 64.0 | 1.90 |
| 41 | 65.6 | 1.90 |
| 42 | 67.2 | 2.00 |
| 43 | 68.8 | 2.00 |
| 44 | 70.4 | 2.10 |
| 45 | 72.0 | 2.10 |
| 46 | 73.6 | 2.20 |
| 47 | 75.2 | 2.20 |
| 48 | 76.8 | 2.30 |
| 49 | 78.4 | 2.30 |
| 50 | 80.0 | 2.40 |
| 51 | 81.6 | 2.40 |
| 52 | 83.2 | 2.50 |
| 53 | 84.8 | 2.50 |
| 54 | 86.4 | 2.60 |

| Gallons of Fuel | Milliliters of Additive | Ounces of Additive |
|-----------------|-------------------------|--------------------|
| 56 | 89.6 | 2.65 |
| 57 | 91.2 | 2.7 |
| 58 | 92.8 | 2.75 |
| 59 | 94.4 | 2.79 |
| 60 | 96 | 2.84 |
| 61 | 97.6 | 2.89 |
| 62 | 99.2 | 2.94 |
| 63 | 100.8 | 2.98 |
| 64 | 102.4 | 3.03 |
| 65 | 104 | 3.08 |
| 66 | 105.6 | 3.12 |
| 67 | 107.2 | 3.17 |
| 68 | 108.8 | 3.22 |
| 69 | 110.4 | 3.27 |
| 70 | 112 | 3.31 |
| 71 | 113.6 | 3.36 |
| 72 | 115.2 | 3.41 |
| 73 | 116.8 | 3.46 |
| 74 | 118.4 | 3.5 |
| 75 | 120 | 3.55 |
| 76 | 121.6 | 3.6 |
| 77 | 123.2 | 3.65 |
| 78 | 124.8 | 3.69 |
| 79 | 126.4 | 3.74 |
| 80 | 128 | 3.79 |
| 81 | 129.6 | 3.83 |
| 82 | 131.2 | 3.88 |
| 83 | 132.8 | 3.93 |
| 84 | 134.4 | 3.98 |
| 85 | 136 | 4.02 |
| 86 | 137.6 | 4.07 |
| 87 | 139.2 | 4.12 |
| 88 | 140.8 | 4.17 |
| 89 | 142.4 | 4.21 |
| 90 | 144 | 4.26 |
| 91 | 145.6 | 4.31 |
| 92 | 147.2 | 4.36 |
| 93 | 148.8 | 4.4 |
| 94 | 150.4 | 4.45 |
| 95 | 152 | 4.5 |
| 96 | 153.6 | 4.54 |
| 97 | 155.2 | 4.59 |
| 98 | 156.8 | 4.64 |
| 99 | 158.4 | 4.69 |
| 100 | 160 | 4.73 |