

COUNTDown

The Complete Diesel Fuel Treatment

20 Questions and Answers

1. What is COUNTDown?

It is a complex blend of several petrochemicals components designed to have a beneficial effect on the combustion process within a diesel engine, with the primary objective of reducing harmful exhaust emissions.

2. How does COUNTDown work?

The product works in two principal ways. Firstly it acts as a cleaning agent on the finely engineered parts of the fuel system, such as injectors, where tolerances are very small with the object of ensuring that the systems works as near to design conditions as possible. Secondly by influencing the combustion process itself by increasing the cetane rating of the fuel and thus ensuring an early start to ignition and as complete a burn as possible, thereby reducing emissions.

3. Why is there so much concern about emissions?

There is increasing evidence that a number of diesel exhaust emissions are harmful to health, or aggravate existing health conditions. In particular NOx and particulates are seen as the major problems.

4. What is NOx?

This is a cocktail of the various oxides of nitrogen produced during combustion. They are believed to aggravate asthmatic conditions, react with the oxygen in the air to produce ozone, which is also an irritant and eventually form nitric acid, a form of acid rain.

5. What are particulates?

These are small fine particles from the exhaust, invisible to the naked eye and not to be confused with black smoke. They contain a mixture of unburnt and partially burnt fuel as well as lubricating oil and compounds which are regarded as carcinogenic or cancer forming. The ones of most concern are referred to as PM10.

6. What is meant by PM10?

These are particulates of a particular size (less than 10 microns) which remain suspended in the air and can be inhaled into the lungs.

7. What effect does COUNTDown have on these emissions?

By ensuring as complete a combustion as possible by keeping the fuel system clean it reduces the level of particulate emission as measured by an air sampling device. By promoting early start to combustion and keeping the temperature in the chamber lower in relative terms, the amount of NOx produced is lowered.

8. Does COUNTDown itself produce any harmful emissions?

The components were tested to ensure that there were no harmful emissions arising from it's use. This is a requirement of the Swedish Environmental Protection Agency and the tests were conducted in line with their method.

9. What do we mean by lubricity of diesel fuel?

Diesel being refined from crude oil has an inherent lubricating property or lubricity. Modern refining methods being used to produce low sulphur diesel fuels as required by EC legislation, remove the sulphur and other compounds in the diesel which provided this lubricating property.

10. Why is lubricity important?

In Sweden and Japan when these new fuels were introduced there were many fuel pump failures due to the lack of diesel fuel lubricity. Low Sulphur Diesel is now common in the UK and although it now contains additives to address lack of lubricity, many feel that it is insufficient. COUNTDown contains a specific component, tested for it's effectiveness using the HFRR test.

11. What is the HFRR test?

This is a standard oil industry test which has recently been developed to assess the lubricity of diesel fuels, and the effectiveness of product such as COUNTDown in improving the lubricity of the treated fuel. Test results are available upon request. The laboratory tests clearly show that greater wear is occurring in fuel pumps with the use of the low-sulphur fuels.

12. What is the UK government doing about air quality?

The government is working with the EC and has also set up EPAQS to monitor air quality levels in city centres, to set targets for the future and to provide advice to the public through daily air quality reports in the national press and on radio and television.

13. What is EPAQS?

This stands for Expert Panel on Air Quality Standards. This body has already set standard levels for PM10 levels.

14. What is the standard level for PM10?

The current standard level for PM10 emissions is 50ug/cu metre of air measured over a twenty-four hour period.

15. Do diesel emissions have any impact upon the ozone hole?

No. Diesel emissions do create ozone as a result of reaction between nitrogen oxides and the oxygen in the air. The ozone hole is a different problem and occurs higher in the atmosphere. Here ozone serves to protect the earth from damaging UV radiation. Certain chemicals which are now banned (the CFC's) have attacked the ozone layer creating a "hole" which allows a greater amounts of UV radiation to reach earth.

16. What are cetane or combustion improvers?

Cetane number is a measure of the ignition quality of diesel fuel, similar to the octane rating of petrol. A fuel with a low cetane number burns less readily. Cetane or combustion improvers are chemicals which improve the combustion characteristics of the fuel.

17. Does diesel fuel contribute to acid rain?

Not to a large extent, particularly now as sulphur levels in diesel are falling. There is obviously some contribution both through sulphuric and nitric acids.

18. We used to often see "black smoke " from diesel vehicles. What is this?

This is largely unburnt fuel. It is harmful and there is some evidence that the amount of black smoke has increased over the years as a result of the large amount of freight carried by road. Use of COUNTDown with its combustion improvers helps reduce this.

19. Can COUNTDown be used with vehicles fitted with diesel catalysts and turbos.?

Yes, and it contains no components that can poison catalysts.

20. Is COUNTDown cost effective?

Because COUNTDown is a "complete fuel treatment" not only reducing emissions but also improving the combustion process itself, fuel consumption improvements are to be seen. A number of independent tests have proved this and have been documented.