

What are the benefits of using the Donaldson Endurance Plus filter?

Donaldson Endurance Plus filters can significantly reduce a fleet's operating costs by extending oil drain intervals, including fleets with pre 2002 engines.

The filter contains Donaldson Synteq filter media for high efficiency filtration and superior dirt-holding capacity.

What do we mean by extended drain intervals?

Today, approximately 35% of class 7-8 trucks run more miles than recommended by the engine manufacturer between oil changes. This is usually based on oil analysis results. The average mileage between oil drains for class 8 trucks is approximately 20,000. However, some fleets run only 15,000 and others 45,000 miles between oil changes. *

**MacKay & Co. Data Mac 2003*

The number of fleets and trucks that extend their oil drain intervals decreased after 2002 when the new emissions compliant engines were introduced, because of the uncertainty of the effects of the operating temperatures of EGR engines on the oil. Rather than follow different maintenance schedules for pre-2002 and post-2002 engine trucks, many fleets are opting to follow one, reduced drain schedule for all their trucks.

The Donaldson Endurance Plus filter offers a solution. Its unique additive replenishment technology can maintain the healthy condition of the engine oil even in today's EGR engines, and can extend the number of miles between oil changes. As with our other Donaldson Endurance lube filters, oil analysis is required to extend oil change intervals.

Who are potential customers for this filter?

- On-highway, line haul truck fleets
- Large fleets that are sensitive to operating costs
- Fleets with emissions compliant EGR engines (post 2002); however, field tests show that Donaldson Endurance filters can also extending oil drain intervals in non-EGR diesel engines.

Who are not potential customers for this filter?

- Customers who use synthetic oil are not prospects for this filter. These customers typically run extended drain intervals and would not see additional benefits. Note: the additive package contained in this filter is compatible with synthetic oil and will not have an adverse effect.
- Customers who already extend their oil drains beyond 30,000 miles or who use Donaldson Endurance lube filters may not find it cost effective to use Donaldson Endurance Plus filters.
- Customers who have established that soot, rather than acid, is the condemning factor in determining their oil changes may not be able to realize the full potential of this product. This filter is not intended to reduce the soot content in oil.

What kind of oil should potential customers use?

Any OEM approved oil grades.

Are Donaldson Endurance Plus Lube filters compatible with the new CJ-4 oils?

The current Endurance Plus products are compatible with CJ-4 engine oils when used in pre-2007 engines. Upcoming product releases will cover your 2007 and newer applications.

Could customers achieve the same results as they do with the Donaldson Endurance Plus if they simply added more additives to new oil?

Donaldson engineers did just that and monitored results. While this kept the oil healthy initially, it did not maintain the healthy condition of the oil over time and did not extend the drain interval. The most effective way is to introduce additives gradually over time; slowly at first and then more rapidly as the original additives become depleted as in the Donaldson Endurance Plus oil filter.

How is this filter able to control the release of the gel for optimum results?

Donaldson engineers used computer-modeling programs to optimize the size of the gel container and the placement and size of the holes in the gel

container. Several containers were designed and tested during the development process. We believe we have optimized the design for best performance.

What is in the gel?

The gel contains a concentrated blend of standard lubricant additives – detergents, dispersants and antioxidants – and is compatible with all types of engine oils, including synthetics. It is calcium-based.

Is the additive gel hazardous?

The gel contains concentrated amounts of the additives currently found in engine oil. We have thoroughly investigated the gel from a manufacturing standpoint, and it is not classified as hazardous in the U.S., Canada or Europe. MSDS sheets are not required, but are available upon request.

Do Donaldson Endurance Plus lube filters require special disposal practices?

Because the concentrated gel contains the same components as engine oil, customers can follow their usual oil filter disposal practice.

Which engines do we have coverage for?

Detroit Diesel Series 60, Cummins ISX, Caterpillar C13/15, Volvo VED12 and Mack ASET. Donaldson is also developing Donaldson Endurance Plus filters for other popular engines.

Does the Donaldson Endurance Plus filter replace any of our current offerings?

No, it is an additional product offering targeted at extending oil drain intervals for EGR engines (post 2002). We still offer standard and Donaldson Endurance filters in addition to the Donaldson Endurance Plus filter for these engines.

Is it harmful to an engine to use a Donaldson Endurance Plus lube filter with synthetic oils?

Absolutely not. The economic benefit may not be as appealing, but there would be no harm in doing so.

What are TBN & TAN and why are they important?

TAN (total acid number) is the measure of the acidity of your oil, and TBN (total base number) is the measure of the counteracting base.

These numbers are important, because during vehicle operation, the engine oil actually becomes acidic and will attack engine components if not kept in check. In order to keep the oil safe for your engine, additives are used to neutralize acid build-up. These neutralizing additives are measured as TBN and the acid concentration as TAN. In order to counteract the acid build-up, the TBN should always be greater than TAN to ensure engine component safety.

What is the purpose of having soot dispersant in an oil additive package?

The soot dispersant is designed to keep soot particles from clumping together and forming a larger size particle. Think of it as a popcorn ball. Soot dispersant keeps the individual kernels from clinging to other kernels and forming a larger ball. The goal is to keep the soot particles so small that they will not harm the engine or cause wear.

What is the savings in oil that a customer would realize by skipping an oil drain?

The typical savings is 10 to 11 gallons of oil. Oil prices vary, but we estimate them to be in the \$4.50 to \$5.50 per gallon range for non-synthetic oil grade.