

WYNN'S DIESEL ENGINE FLUSH

Product Number: 67001 24 x 325 ml

Our new Low SAPS formulation, WYNN'S DIESEL ENGINE FLUSH is a pre-oil change Diesel Engine Flush that cleans vital engine parts, removing harmful deposits, sludge, soot and varnish that impede oil flow. The dispersants deliver excellent pollution control which is needed in diesel engines operating under harsh conditions.

WYNN'S DIESEL ENGINE FLUSH is specially designed to gently lift and remove internal engine contaminants by suspending them in high level of dispersants. WYNN'S DIESEL ENGINE FLUSH Professional Formula provides a high degree of protection to the engine components, seals and gaskets during the flushing process. This is unique as most of the chemicals in the market for flushing engines contain harsh solvents which attack seals, gaskets and metal parts. These damaging effects are hidden and are not noticeable by the vehicle owners immediately.

Wynn's Professional Formulas are proven in the market as the safest and most effective chemical to flush contaminants out of the engine oil system.

WYNN'S DIESEL ENGINE FLUSH with the addition of Wynn's Friction Proofing contains anti wear properties. These particles are shaped similar to dispersants and detergents, but the polar heads of these molecules are attracted to the metal surface. Once attached to the metal surface the anti-wear additives form a sacrificial layer that protects the surfaces beneath them from degradation under boundary conditions.

BACKGROUND INFORMATION

Oil breaks down from chemical changes and mechanical stress that occur as mileage is put on a vehicle. Additives present in all motor oils are depleted during everyday use. The oil oxidises. Varnish, sludge & soot deposits accumulate on vital engine parts and can interfere with smooth operation.

Furthermore, engine oils can be exposed to fuel soot due to incomplete combustion of the fuel or carbon being introduced into the engine by various emission controls, acids formed by the combustion of the fuel, and the ingestion of moisture and dirt from the engine's air intake system. If these contaminants are allowed to build up in the engine oil they can result in:

- Increased engine wear, especially in the valve train area
- Increased deposits, especially in the piston rings and crown land of the piston.
- Increased cylinder bore polishing



Figure 1 - Sludge Build Up

- Thickening of the engine oil's viscosity
- The formation of oxidation precursors in the engine oil
- Poor oil pump ability especially during cold weather conditions
- Plugging of oil filters
- Rapid depletion of the engine oil's additive system
- Decreased engine durability and life.

SOOT DEPOSIT'S EXPLAINED

Soot is a by-product of combustion and exists in all in-service diesel engine motor oils. It reaches the engine by various means of blow-by during engine operation. While the presence of soot is normal and expected for a given number of miles or hours of service on an engine oil, the concentration and state of soot may be abnormal, signalling a problem with the engine and/or a need for an oil change.



Figure 2- Soot Build Up

Following are some issues related to soot contamination:

- Combustion efficiency is directly related to the soot generation rate. Poor ignition timing, restricted air filter and excessive ring clearance cause high soot load. Combustion problems are not solved by an oil change.
- New diesel engines designed for lower emissions have higher injection pressures. This corresponds to increased sensitivity to abrasive wear (for example, from soot) between rocker, shaft and rocker bearing and can lead to rocker arm seizure. New exhaust gas recirculation (EGR) units on diesel engines amplify the amount and abrasivity of soot production.
- Viscosity increases with soot load. However, high dispersancy associated with some modern engine oils may increase viscosity with soot even more. High viscosity corresponds to cold-start problems and risk of oil starvation.
- Soot and sludge in engines deposit or separate from the oil in the following areas, all presenting risks to engine reliability including rocker boxes, valve covers, oil pans and head deck.
- Deposits on engine surfaces interfere with combustion efficiency and fuel/oil economy.
- Soot polishes off protective anti-wear soap films in boundary zones such as cam and cam-follower zones.
- Carbon jacking from the build-up of soot and sludge behind piston rings in grooves can cause rapid wear of rings and cylinder walls. This can cause broken or severely damaged rings during cold-start conditions.

In order to prevent the formation of these deposits, soot, sludge and resins, it is important that



PRODUCT INFORMATION SHEET

Page 3 of 6
67001 WYNN'S DIESEL ENGINE FLUSH
Date of Issue May 2016

a detergent/dispersant additive system is used.

Typical engine flushes are mostly high concentrated solvent-types that dilute engine oil so it will drain out faster. If a vehicle is driven before changing the oil or the flush is left in too long, the oil's lubrication ability can be reduced. This same type of solvent may not affect varnish and sludge that has accumulated on engine surfaces. The new oil may be contaminated by the deposits left behind.

High solvent content flushes can be harmful to diesel engines as they offer no protection for moving parts of the engine.

WYNN'S DIESEL ENGINE FLUSH contains the famous WYNN'S FRICTION PROOFING to reduce friction and wear.



Today, high speed, high compression engines and especially those with emission control, run hotter.

To offset this, motor oils have been compounded to have increased dirt removing properties. Motor oils with good detergent properties, collect dirt from all parts of the engine and dust that enters the breather, and this dirt is held in suspension in the oil.

As this dirt accumulates and detergent failure occurs, little lumps become big lumps and then gooey sludge forms. This sludge combines with the resins, gums and lacquers (which result from the oxidation of lubricants) and the acids which are formed as the by-products of fuel combustion.

Under conditions of high temperatures, all of this foreign material becomes baked on to the moving parts of the engine, and only part of it is removed when the oil is drained. When the oil is changed, the new oil is already dirty before the motor drives out of the service station.

Unless all dirt is completely removed from the engine, the volume which can accumulate after months or years of driving becomes almost unbelievable. Although some auto manufacturers are recommending extended drain intervals, the fact is that motor oils alone are unable to remove the amount of dirt that can accumulate in 8,000-10,000kms. There is now an even greater need for an engine on a prolonged drain schedule to be flushed at the time of each change.

ADVANTAGES

Wynn's Diesel Engine Flush is a premium low sap professional formula that safely cleans and prepares the crankcase for the addition of clean oil.

WYNN'S DIESEL ENGINE FLUSH contains no harsh solvents or alcohols as do many engine flushes. This special Professional Formula helps suspend and remove sludge and varnish deposits from vital engine parts.

WYNN'S DIESEL ENGINE FLUSH is more than a flush! It provides protection, too.

WYNN'S DIESEL ENGINE FLUSH is professionally formulated with detergents, dispersants and anti-wear additives, so the engine still has lubrication protection during cleansing.

WYNN'S DIESEL ENGINE FLUSH is professionally formulated to provide the following advantages:

- Provides controlled dissolving and removal of crankcase deposits from the top down, and helps provide optimum engine lubrication and performance by removing soft deposits from critical areas.
- Dissolves and thins highly oxidised oil, allowing a more complete removal of the used oil, thereby reducing the contamination of the new oil.
- Helps reduce oil consumption problems resulting from blocked or restricted cylinder head oil drain return holes.
- Assists in removing crankcase contaminants and holds them in suspension so that they can be drained with the used oil.
- Helps assure optimum engine life by reducing the accumulation of deposits which can block oil lines and screens and restrict proper lubrication of engine components.
- Assures proper valve train and oil pump operation by removing deposits in these areas, thereby helping to ensure engine efficiency.
- Removes and suspends low temperature sludge deposits.
- Conditions the metal surfaces to provide additional anti-wear protection from metal-to-metal contact during the cleaning operation and in preparation for the new oil.

BENEFITS

WYNN'S DIESEL ENGINE FLUSH is a pre-oil change preparation that is professionally formulated to provide the following benefits:

- Safe to use in modern diesel engines fitted with catalysts and Diesel Particulate Filters (DPF). These engines require an engine oil with a low Sulphated-Ash, Phosphorus and Sulphur content (Low SAPS).
- Contains effective cleaners that remove sludge and varnish.
- Restores engine compression and performance.
- Suspends and removes deposits for improved lubrication.





PRODUCT INFORMATION SHEET

Page 5 of 6
67001 WYNN'S DIESEL ENGINE FLUSH
Date of Issue May 2016

- Contains WYNN'S FRICTION PROOFING for engine wear protection
- Protects metal parts from harmful contaminants during oil changes
- Contains no harmful solvents, acids or alcohols.
- Cleans build-up from oil lines
- Maintains oil protection.
- Promotes a more complete draining of used oil.
- Assures engine efficiency.
- Reduces oil consumption resulting from blocked oil drain return holes.
- Dissolves old highly oxidised oil.
- Reduces new oil contamination.
- Cleans in one simple application.

APPLICATIONS

WYNN'S DIESEL ENGINE FLUSH is suitable for a wide range of diesel engines; from small cars, to SUV's, to 4wd's, to light commercials and trucks.

WYNN'S DIESEL ENGINE FLUSH treats sump capacities from 6 to 18 Litres.

Use before each oil change to improve engine performance.

- With engine off, add entire contents of 325ml bottle of WYNN'S DIESEL ENGINE FLUSH to the used engine oil in the crankcase.
- Let engine idle for at least 15 to 30 minutes to ensure an extremely sludgy engine is cleaned effectively.
- Stop the engine and carefully drain the used oil whilst hot.
- Replace the sump plug, install a new oil filter and re-fill the engine with new oil. Run and test the engine, paying particular attention to the oil pressure.

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PRODUCT INFORMATION SHEET

Page 6 of 6
67001 WYNN'S DIESEL ENGINE FLUSH
Date of Issue May 2016

WARNING: If the engine has not been flushed for a long time, it is vital to watch the oil pressure gauge (if fitted) or the oil pressure alarm after the flush. If the oil pressure is low, there is a possibility that contaminants are still in the system. Stop the vehicle and turn the motor off as soon as it is safe to do. Return the vehicle to the workshop and conduct a manual inspection of the oil system to locate the cause of the alarm.

TYPICAL CHARACTERISTICS

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| • Appearance | Clear Thin Liquid |
| • Colour (Visual) | Dark Brown |
| • Density @ 15°C | 0.8702 (ASTM D 4052) |
| • Viscosity @ 40°C (cSt) | 6.5 (ASTM D 445) |
| • Flash Point (°C) PMCC | 77 (ASTM D 93) |

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