

AeroShell

A Fine Family of Oils



AeroShell Oil Diesel 10W-40

The introduction of AeroShell Oil Diesel 10W-40 again shows that the AeroShell brand is at the forefront of technology. In partnership with the engine manufacturers SMA and Thielert, development and testing of this very special lubricant began in 1997 and saw 40,000 hours of engine testing prior to release to the market. As with all of the AeroShell products, you can be confident that it is qualified for flight before it ever leaves the ground. AeroShell Diesel 10W-40 is indeed a worthy addition to the AeroShell product range.

AeroShell Diesel 10W-40 is a premium grade, fully synthetic engine oil, combined with an additive package developed by, and unique to Shell. It is a new oil for a new class of engine, but with a ready-proven pedigree.



AeroShell Fluid 2F

AeroShell Fluid 2F is a powerful combination of a corrosion concentrate and AeroShell 100 engine oil and is designed especially to prevent rust and corrosion during long-term storage. For engines that will not be used for periods of several months or more, this is the ideal answer.



Even though it is a powerful storage oil, AeroShell Fluid 2F is unusual in that, in horizontal engines, it can be used for occasional flying too: up to 50 hours during a TBO cycle of the engine. AeroShell Fluid 2F comes ready mixed and using it couldn't be easier: it is as simple as performing an oil and filter change and running the engine for around 15 minutes prior to storage.



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Confidence, Global Technical Leadership, Innovation

It has been upon these foundations that the most trusted and widely used brand of aviation lubricants has been built. Since the 1920's, aviators have recognised AeroShell as "The lifeblood of flight"

www.shell.com/aviation





Meet the family

Shell Aviation has always been ready to produce improved oils for existing technology engines and to develop brand new oils for new technology engines such as the emerging compression ignition powerplants. With a presence on every continent and the most knowledgeable technical back-up in the industry, there's no wonder that AeroShell dominates the global market in General Aviation lubricants. We currently offer everything from straight mineral oils in 4 different viscosities, to the very latest synthetic multi-grade for piston engines operating on Jet fuel.

No other company has a more comprehensive, or more thoroughly proven range of products than Shell. Even products that are new to market are thoroughly proven: over 5 years and 40,000 hours of testing and development for our latest release - AeroShell Oil Diesel 10W-40 - prior to its release to the market. Leading technology is all about showing the way and so we worry about the oil so that you don't have to. Here is the AeroShell range of lubricants that sets the standard for General Aviation.

Straight Mineral Grades: AeroShell Oil 65 to 120
Shell markets 4 grades of straight mineral oil that are designed for different climatic conditions. These grades are produced from a special class of high viscosity index base oils to ensure optimal performance throughout their service life. One of the most common uses for the range of AeroShell straight oils is to aid the break-in of new or overhauled cylinders.

Shell is very unusual amongst oil companies in that it is an integrated supplier of aviation piston engine oils. This means Shell owns and controls



the whole process from crude oil selection and refining through to blending and bottling. This flexibility, combined with decades of experience, allows Shell to ensure that the end product is as good as it can be.

It should be noted that some manufacturers require the use of ashless dispersant oils for break-in with some engine types.

AeroShell W Grades W65 to W120
The single grade AeroShell W range of oils is blended using the same carefully selected base oils as used with our straight oil grades. However the W grades also include a range of special non-ash producing additives specifically designed for aircraft engines. As well as additives that combine to protect the oil from oxidation, improve the oil flow

at low temperature and to help prevent the oil from foaming, there are also additives to help keep the engine clean. This technology is designed to hold particles in suspension so that they are easily removed from the engine, either by the oil filter or during oil draining, thereby helping to prevent the formation of sludge deposits inside the engine. Containing "ashless" additives is

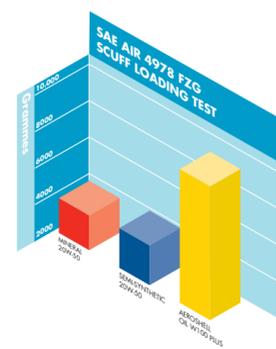
important and makes these products different from other classes of oils. Being ashless means that, in high oil consumption engines, the oil and oil additives will burn cleanly, preventing the deposit build up that can cause pre-ignition and engine failure.

The AeroShell Ashless Dispersant "W" range of monograde mineral oils are suitable for frequently-used engines that do not require the addition of an anti-scaffing agent. The single grade AeroShell W oils are the world's best selling range of aviation piston engine oils and have provided peace of mind to generations of pilots.



AeroShell Oil W80 Plus and W100 Plus

Plus What? Just when you thought that single grade piston engine oils were as good as they can get, along comes something even better. The AeroShell W Plus oils give you the proven protection of the AeroShell W ashless dispersant technology plus superior rust protection and industry leading anti-wear properties. In addition the 'Plus grades' also contain a metal de-activator additive to further reduce premature oil ageing, which can otherwise occur due to the catalytic effect of some of the engine's internal metallurgy. The anti-wear additive used in AeroShell oils helps to prevent metal-to-metal wear when engines are first started – a period where experts estimate up to 80% of engine wear happens. This additive is approved by Lycoming and is equivalent to their LW-16702, but testing has led to Shell to use a subtly different molecular structure to reduce toxicity risks



and problems associated with copper absorption in the engine – again the value of experience.

Careful blending also helps to prevent wear during in the more demanding applications. AeroShell W100 Plus outperforms two competitor multigrade oils (a mineral 20W-50 and a semi-synthetic 20W-50) in the SAE scuff loading test with almost 3 times the load carrying capacity – one of the reasons that Shell prefers these oils in heavily-loaded applications such as radial engines.

The 'Plus range' also performs well in geared engines; in the Ryder Gear Test AeroShell W100 Plus outperformed the same competitor oils carrying almost 1.5 times the load.

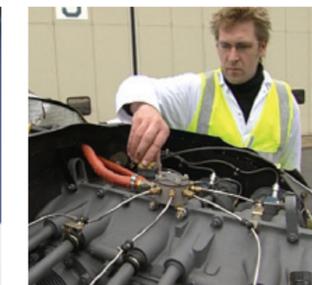
AeroShell W80 Plus and W100 Plus - there are simply no better single grade aviation piston engine oils available.

AeroShell Oil W 15W-50 Semi-Synthetic Multigrade

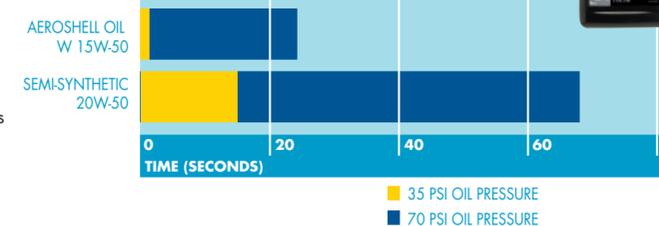
AeroShell Oil W 15W-50 is without equal in the world of piston engine aircraft lubricants. Over 20 years ago Shell were the first to successfully introduce synthetic oil into aviation piston engine lubricants. Now with well over 20 million hours of successful field use, the benefits are enjoyed by many thousands of aircraft owners.

Being semi-synthetic makes AeroShell Oil W 15W-50 unusual in the world of aviation multigrades, but there are advantages to this. Synthetic oils have far greater resistance to oxidation and can withstand much higher temperatures than any mineral oil, making your engine feel like it contains fresh oil for longer. Containing around twice the synthetic oil content of any other approved semi-synthetic aviation multigrade, AeroShell Oil W 15W-50 is especially suited to high performance and turbo-charged applications.

AeroShell Oil W 15W-50 obviously handles heat well, but it also excels in cold weather with the best low temperature flow of any aviation piston engine oil. In recent tests at 0°C, it was shown to produce full oil pressure throughout a common Lycoming engine over 40 seconds earlier than a competitor semi-synthetic 20W-50 oil. Faster oil flow means reduced engine wear.



TIME TO ACHIEVE FRONT OIL GALLERY PRESSURE TEST AT 0°C



AeroShell W 15W-50, the premium aviation piston engine oil in the market, also contains the same anti-corrosion and anti-wear additive package that is found in the AeroShell W80 Plus and W100 Plus range as well as the performance additives found in the AeroShell single grade W oils.

Careful control of superior base oils, Group 1 Mineral and Group 4 Synthetic, combined with the best additives your engine can experience, means significant long-term savings for your budget - a formula that thousands of pilots have learned to trust.

The selection of the correct viscosity oil for the ambient operating conditions is both significant and important. Following the engine manufacturer's recommendation should always take precedence.