

BY ERIC GARBE

THE DEXOS CONNECTION

General Motors released its dexos1 oil specification in 2011. It came about as part of an initiative to create a global oil specification to ensure consistent oil quality for engine development and production. This would also reduce the number of resources it took to maintain the multiple different specifications they had at the time.

The testing required to meet the

original dexos1 specification was a combination of some of the most rigorous tests in the industry. GM found that oils that didn't meet the new dexos1 specification could affect engine performance and potentially cause engine damage, and as a result, not using it in a new GM vehicle that specified it could affect the engine warranty.

During this time, low speed pre-ignition (LSPI) was becoming

a problem with modern small displacement, direct injected, turbo charged engines. Heavier loads on these smaller engines were partly to blame for the increase in LSPI, but it was also discovered that certain detergents in the engine oil contributed to the problem, leading to the development of new engine oil chemistries.

Another oil related challenge involved the widespread use of variable valve

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The advertisement features two technicians in black and red uniforms working in a garage. In the foreground, a variety of Liqui Moly products are displayed, including motor oils (SAE 5W-40, SAE 5W-30, SAE 5W-20), brake and gear cleaners, engine flush, and other maintenance fluids. The background shows a workshop environment with a car lift and various tools.

timing (VVT) systems, which require that engine oil acts as a hydraulic fluid. When used in these applications, air in the system will severely affect their operation, and resistance to aeration became a prevalent factor for motor oils.

So, in 2015, GM introduced the dexos1 Gen 2 specification. This improved upon oxidation and deposit control, and this new oil met a new series of tests, including an LSPI test and a test measuring the oils resistance to aeration.

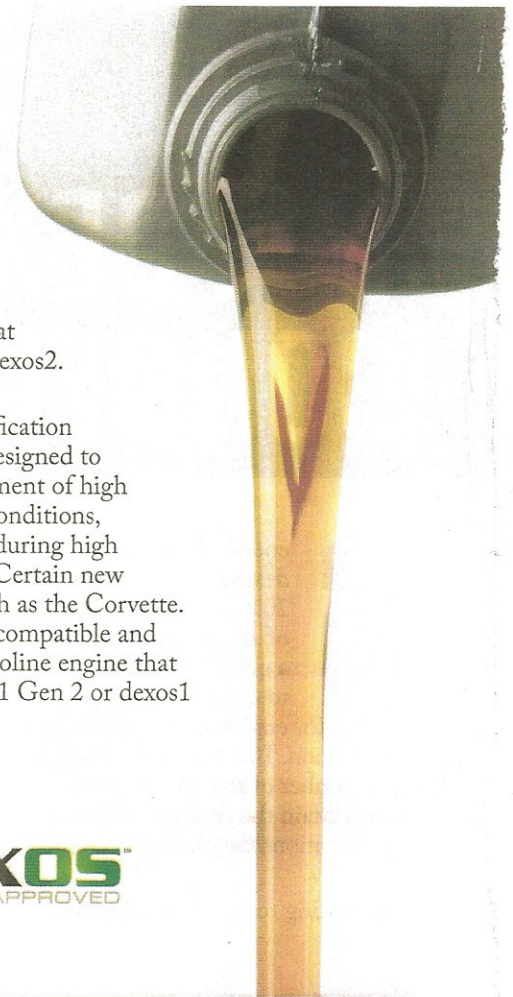
The current dexos1 Gen 3 standard reflects a further reduction in oil degradation and deposit formation, as well as improved sludge control. Dexos1 Gen 3 oils are backwards compatible and acceptable for use where dexos1 and dexos1 Gen 2 is called for.

Only licensed dexos products are verified by GM to meet the dexos specifications. There are many engine oils which meet these specifications, and they can be easily identified, but there are two markings which must be present on an oil that meets the dexos specification. One is the dexos icon on the front label and the other is an 11-digit alphanumeric dexos license number which will be located on the back label. If an oil does not display both of these markings, it does not meet the dexos specification.

Dexos2 was an original formulation that met the requirements for many gasoline and light duty diesel engines, but it is being discontinued in 2025 and replaced by

dexos D for diesel engines and dexos R for gasoline engines. Dexos D is formulated for use in light duty diesel engines and is backward compatible for use in anything that previously called for dexos2.

The latest dexos specification is dexos R, which is designed to withstand the punishment of high speed and high load conditions, such as those created during high performance driving. Certain new vehicles require it, such as the Corvette. Dexos R is backward compatible and can be used in any gasoline engine that calls for dexos2, dexos1 Gen 2 or dexos1 Gen 3 oil. GM



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