Global R&D Capabilities

Founded in 1911, Idemitsu Kosan is a leading supplier of lubricants to the automotive industry worldwide. Idemitsu's commitment to continuous innovation is best exhibited through its global network of R&D centers, including a state-of-the-art lab facility in Wixom, Michigan.





Unique Development Philosophy

The Idemitsu development philosophy centers on a combination of laboratory and practical performance evaluations to meet customer requirements. Working closely with customers to understand their needs, and through the utilization of actual machine simulations, Idemitsu continuously develops innovative and market-leading product technologies that consistently outperform the competition.

The Three Pillars of Development

The core of Idemitsu's development process incorporates three principles, or pillars, on which all lubricant formulations are based. They include (1) the selection of proper materials, (2) how best to test product, and (3) how to determine if end products meet the exacting specifications and demands of OEM customers.



CUSTOMIZED OEM LUBRICANT SOLUTIONS

- Material Selection
- Material Compatibility
- Friction Management

Development Process

an ever-changing industry.

• Prevention of

Degradation

- Simulate Real World Conditions • Design & Fabricate
 - New Equipment for Evaluation
- Organic or **Inorganic Analysis**
- Surface Analysis



Requirement



Translate Requirements into Technical Terms







Planning & Scheduling



Laboratory Evaluation



Selection of Candidate Oil



Final Resolution of Specification



Practical Performance Evaluation



Preliminary Consideration for **Practical Performance**



Submission for Final Approval

PIONEERS OF 0W-20

IDEMITSU IS A LEADER IN THE DEVELOPMENT OF 0W-20 AND LOWER VISCOSITY SYNTHETIC OILS.

Almost 20 years ago, Idemitsu partnered with Honda to develop a lower viscosity oil to boost fuel economy in their hybrid vehicles. After rigorous testing and refinement, Honda began to fill their new Insight Hybrid at the factory with Idemitsu 0W-20. This lower viscosity higher grade synthetic oil used unique additives to enhance stability and reduce volatility - the typical drawbacks of low-viscosity oil.

Shortly after, in 2005, Honda began filling non-hybrid vehicles with Idemitsu 0W-20. Other automakers quickly took note and soon, all the major Japanese brands followed suit. Nissan began using it in 2006, as did Toyota in 2009.





Idemitsu brought 0W-20 stateside in 2010. Since then, it has been the factory-fill oil of millions of Honda, Toyota and Nissan vehicles made in America. And with mounting government pressure to increase fuel economy, US automakers are now looking at 0W-20 as a viable option. Idemitsu was the first to obtain GM dexos1™ Gen2 approval for our 0W-20 ZEPRO premium synthetic oil.

So if these manufacturers, known for their quality, trust Idemitsu 0W-20 oils for their vehicles from the factory, why wouldn't you?

Idemitsu 0W-20

ZEPRO 0W-20 with Molybdenum

ZEPRO 0W-20 dexos1[™]

ULTRA-LOW VISCOSITY FOR MAXIMUM FUEL ECONOMY

ZEPRO ECO MEDALIST 0W-16 ULTRA-LOW VISCOSITY PREMIUM ENGINE OIL

Using ZEPRO 0W-16 results in a 4.7% friction reduction at idle speed and 3.4% at high speed, which can result in increased fuel economy and power, and greater engine protection, compared to other engine oils in the marketplace.

ZEPRO 0W-16 engine oil exceeds industry standards for high-temperature deposit production and sludge control, which may result in increased engine protection and reliability.

- Increased Fuel Economy
- Increased Engine Power
- Increased Engine Protection
- Increased Engine Reliability

ZEPRO 0W-16, specially formulated for hybrid engines, exceeds fuel economy standards set by the International Lubricants Standardization and Approval Committee for fuel economy.



ADVANCED MOLYBDENUM FORMULA REDUCES FRICTION

ZEPRO ECO MEDALIST 0W-20 PREMIUM ENGINE OIL WITH MOLYBDENUM

The unique formulation of ZEPRO 0W-20 with Molybdenum helps reduce engine friction by 7% at idle speed and 3% at high speed compared to other motor oils. This can result in increased fuel economy, increased power and increased protection for your engine.



ZEPRO 0W-20 with Molybdenum exceeds industry requirements for high-temperature deposit control, surpassing both dexos1[™] Gen2 and GF-5 specifications.

- Increased Fuel Economy
- Increased Engine Power
- Increased Engine Protection
- Increased Engine Reliability

25% CLEANER THAN THE CURRENT GF-5 REQUIREMENT

ZEPRO ECO MEDALIST 0W-20 dexos1™ PREMIUM ENGINE OIL

ZEPRO 0W-20 dexos1[™] exceeds industry requirements for piston cleanliness, 16% greater than dexos1[™] Gen2 and 25% greater than GF-5 limits, which could result in increased oil and engine life.

- Increased Engine Oil Life
- Increased Engine Life





PISTON CLEANLINESS



About GF-5 Specification

Introduced in October 2010, the ILSAC GF-5 specification established stricter engine oil standards and fuel economy requirements. The specification was designed to ensure increased compatibility and protection of modern automotive engines, including hightemperature deposit protection for both pistons and turbochargers, more stringent sludge control, improved fuel economy, enhanced emission control system compatibility, seal compatibility and the protection of vehicle engines operating on ethanol-containing fuels up to E85.

About dexos1[™] Gen2

Introduced in 2015, the dexos1[™] Gen2 specification by General Motors is designed to provide increased engine protection and performance, especially with regard to low-speed pre-ignition protection for turbocharged engines with small displacements. It is recommended for use in all General Motors vehicles regardless of make, model or year.

EXCEEDS GF-5 CLEANLINESS REQUIREMENTS

IDEMITSU 0W-20 ENGINE OIL

Idemitsu 0W-20 provides superior engine cleanliness against industry requirements, which could result in increased fuel economy and reduced engine exhaust pollution.

- Increased Engine Oil Life
- Increased Engine Life



PISTON CLEANLINESS

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MEET YOUR MATCH

IDEMITSU AUTOMATIC TRANSMISSION FLUID (ATF)

Idemitsu ATF formulations are exclusively designed to meet the needs of specific Asian vehicle transmission applications. Each formula uniquely differs with respect to viscosity, oxidation prevention, friction durability, aeration control and wear protection.



Why You Should Always Use Idemitsu ATF

- Precisely engineered formulas match OEM friction materials and exact viscosity requirements, providing "dialed-in" performance
- Excellent anti-shudder durability, oxidation stability and deposit control
- Smoother shifting and higher torque capacity for high-energy clutch engagements
- Precise friction enables increased utilization and controlled slipping of torque converter lockup clutch for improved fuel economy
- Reduced warranty claims and repair call-backs

The Case for Vehicle-Specific ATF

To accommodate the increasing number of gear sets, the clutch packs have become smaller and the total surface areas of the clutch plates have been reduced. ATFs must provide a precise balance of frictional properties that provide the exact coefficient of friction specific to the OEM design that allows proper clutch heat transfer and wear protection.

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In addition, the increased use of the torque converter lockup clutch requires controlled friction properties that enable the hardware to deliver significant efficiency improvements. When ATF friction properties are not compatible with the torque converter lockup clutch material, the transmission produces shudder (vibration), and drivability is negatively impacted.

These two friction requirements require a delicate balance of friction modifier additive chemistry stabilized by a robust combination of antioxidants and specifically engineered lubricant fluid (or base oil) technology in order to deliver the performance required for smooth and consistent vehicle launches and shifting throughout the entire life of the oil.

Working with individual OEMs, Idemitsu has engineered technologies to meet these precise property requirements.

Feel the difference with Idemitsu.

Discover a comprehensive collection of oils, fluids, lubricants on our website.