
Product Description

D-A Reliant™ is a technologically-advanced heavy-duty diesel engine oil, designed to provide extra protection against deposits and wear for engines operating in heavy duty service. Depending on the viscosity, D-A Reliant is recommended for diesel (and some gasoline) engines requiring an engine oil meeting API Service Categories CI-4, CH-4, CF, SJ, SL; Cummins CES 20078; CAT ECF-1a; Mack EO-N Premium Plus and Volvo VDS-2. Innovative concepts have been incorporated into D-A Reliant to provide efficient equipment operation and improved component durability.

Reliant is blended from only US refined high-quality base oils treated with D-A's ChemGuard™ additive system. Reliant contains just the right combination of active diesel detergents and dispersants, antiwear agents, and oxidation, rust, and corrosion inhibitors.

Product Features and Benefits

Carefully selected base oils designed for diesel engine service provide:

- *reduced oil consumption*
- *improved control of engine wear through rapid oil flow on cold starts*
- *proper metal-to-metal separation during high temperature, high load operation.*

Reliant can be used in selected powershift transmissions. *It protects against clutch plate glazing, providing longer transmission life with less slippage.*

Contains high dosage of active diesel detergents to *keep internal engine parts clean and operating efficiently.*

Meets service requirements of mixed heavy-duty diesel fleets while *satisfying gasoline engine service requirements.*

The use of shear stable polymer results in resistance to in-service viscosity loss, *providing excellent viscosity protection and reduced oil consumption under tough service conditions. Reduces operating costs.*

Precise product balance for *optimum performance, reduced maintenance expense and compliance with engine manufacturer warranty service requirements.*

Service Applications (Meets Specifications for:)

<p>15W-40 ACEA: E3-96 (issue 3), E5-99 Allison C-4 API: CI-4, CH-4, CF, SL, SJ Caterpillar ECF-1a Caterpillar TO-2 Cummins CES 20078 Global DHD-1 Mack EO-N Premium Plus MB 228.3 Navistar Volvo VDS-2</p>	<p>10W-30 API: CI-4, CH-4, CF, SL, SJ Cummins CES 20078 Mack EO-N Premium Plus 5W-20 and 5W-30 (Gasoline Engines) API: SL, SJ 10W API: CF, SL, SJ Allison C-4 Caterpillar TO-2</p>	<p>20W (20W-20) API: CF, SL, SJ 30 API: CF, SL, SJ Allison C-4 Caterpillar TO-2 40 and 50 API: CF, SL, SJ</p>
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Typical Properties:

SAE Viscosity Grade	5W-20*	5W-30*	10W-30	15W-40	10W	20W-20	30	40	50
Viscosity									
@ 100 °C, cSt	7.9	10.8	11.1	15.0	6.4	8.7	11.4	14.5	19.7
@ 40°C, cSt	43.8	61.3	79	112	41.8	65	103	144	222
Viscosity Index	151	169	130	136	100	105	98	96	95
Cold Cranking Viscosity — ASTM D5293 (SAE Grade Maximum: 5W- = 6600 cP, 10W- and 15W- = 7,000 cP, 20W- =9,500 cP)									
@ -15°C, cP	—	—	—	—	—	4,000	—	—	—
@ -20°C, cP	—	—	—	6,600	—	—	—	—	—
@ -25°C, cP	—	—	6,400	—	5,800	—	—	—	—
@ -30°C, cP	6,200	6,200	—	—	—	—	—	—	—
Cold Pumping Viscosity — ASTM D4684 (SAE Grade Maximum: All Grades = 60,000 cP)									
@ -20°C, cP	—	—	—	—	—	<20,000	—	—	—
@ -25°C, cP	—	—	—	<20,000	—	—	—	—	—
@ -30°C, cP	—	—	<20,000	—	<20,000	—	—	—	—
@ -35°C, cP	<27,000	<39,000	—	—	—	—	—	—	—
Borderline Pumping Temperature — ASTM D3829									
Maximum °F, (°C)	-22 (-30)	-22 (-30)	-13 (-25)	-4 (-20)	-13 (-25)	+5 (-15)	No SAE requirements established		
High Temperature/High Shear Viscosity Stability									
@ 150°C, TBS, cP	—	—	3.6	3.9	—	—	—	—	—
Flash Point, COC, °F(°C)	400 (205)	410 (210)	410 (210)	430 (221)	410 (210)	425 (218)	455 (235)	460 (238)	475 (246)
Gravity, API	31.6	32.8	28.6	27.6	28.8	28.5	27.7	26.5	26.2
Sulfated Ash, Wt. %	1.2	1.2	1.5	1.5	1.2	1.2	1.2	1.2	1.2
Dielectric Strength, kV	—	—	—	—	47	53	—	—	—
ASTM D-877									
Total Base Number	9	9	11	11	9	9	9	9	9
ASTM D2896									

*Note: 5W-20 and 5W-30 are only approved for API Service Category SL and SJ gasoline engine applications.

**To Order D-A Products, Call 1-800-OIL-LUBE (1-800-645-5823)
Or Fax Orders to (317) 923-3884**

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