Technical Service Bulletin

Date: Rev. 1: 4/17/2009

Product Description: All AMSOIL Synthetic Engine Oils

Subject: Using AMSOIL in engines with possible sludge issues

OBJECTIVE:

To inform AMSOIL customers that operating conditions of certain engine designs are reported to be "abnormal." According to *Consumer Reports*, the engines identified in this bulletin appear to be prone to sludge. The use of AMSOIL Synthetic Motor Oils at regular drain intervals established by the vehicle manufacturer will reduce the likelihood of sludge formation, provide the best protection and insure the vehicle manufacturer honors owners' extended warranties.

ISSUES:

According to the August 2005 issue of *Consumer Reports*, engines from four different automobile manufacturers are candidates for possible sludge problems. To satisfy customers, Audi/Volkswagen, Lexus/Toyota and Saab have all extended their warranties to eight-years/ unlimited mileage. Chrysler/Dodge is the only manufacturer without an extended warranty program and handles claims on a case-by-case basis.

Provisions of the extended engine warranty coverage include changing the oil within the OEM-recommended interval and maintaining documentation for proof.

TECHNICAL DISCUSSION:

Sludge formation is caused by oil being subjected to abnormal operating conditions such as high heat, excessive blow-by gasses, glycol contamination or poor crankcase ventilation. Sludge formation, if severe enough, can block the oil passages and oil pump pick up screen, resulting in oil starvation.

AMSOIL Synthetic Oils have better oxidation resistance, detergency and dispersancy than conventional petroleum oils, and they do a better job of resisting sludge. However, they will not stop sludge formation under abnormal engine operating conditions. The use of synthetic oil for the best possible engine protection is endorsed by *Consumer Reports*.

RECOMMENDATION:

Purchasers of used vehicles listed in Table A should take extra precautions to protect their purchases by reviewing maintenance records or requesting an internal engine inspection prior to purchase.

Follow regular OEM-recommended drain intervals with the appropriate AMSOIL Synthetic Motor Oil for cars prone to sludge. The AMSOIL XL series oils may be a more cost effective option depending on personal preference.

Keep accurate records of all maintenance, engine inspections and oil/filter changes, such as receipts from quick lubes or proof of product purchase and documentation of installation for those who install their own oil.

Submitted By: DW **Approved By: DP** **Approval Date: 4/17/09**

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TABLE A: **AFFECTED ENGINES/APPLICATIONS:** ***(1)***

Make	Engine	Model	New Warranty Coverage	U.S. Engine Population
Audi/Volkswagen	1.8L 4cyl Turbo	1997-2004 Audi A4 1997-2004 Volkswagen Passat	8 years/unlimited mileage	447,000
Chrysler/Dodge	2.7L V-6	1998-2002 Chrysler Concorde 1998-2002 Chrysler Sebring 1998-2002 Dodge Intrepid 1998-2002 Dodge Stratus	None. Handled on a case by case basis	797,000
Lexus/Toyota	3.0L V-6	1997-2001 Lexus ES300 1999-2001 Lexus RX300 1997-2001 Toyota Camry 1997-2001 Toyota Avalon 1997-2001 Toyota Sienna 1999-2001 Toyota Camry Solara 2001 Toyota Highlander	8 years/unlimited mileage	1,577,000
Toyota	2.2L 4cyl	1997-2001 Toyota Camry 1996-1999 Toyota Celica	8 years/unlimited mileage	1,757,000
Saab	2.0L 4cyl Turbo	2000-2002 9-3 Hatchback 2000-2003 9-3 Convertible	8 years/unlimited mileage	82,000
	2.3L 4cyl Turbo	2000-2003 9-5	8 years/unlimited mileage	68,000

(1) Source: ConsumerReports.org

http://www.consumerreports.org/main/content/display_report.jsp?FOLDER%3C%3Efolder_id=665845&ASSORTMENT%3C%3East_id=333137&bmUID=1127493370780#

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TABLE B: Recommended Drain Intervals *(2)*

Make	Engine	Model	Oil Drain Intervals for Extended Warranty Coverage
Audi/ Volkswagen	1.8L 4cyl Turbo	1997-2004 Audi A4 1997-2004 Volkswagen Passat	5,000 miles, or six months (normal/ severe)
Chrysler/Dodge	2.7L V-6	1998-2002 Chrysler Concorde 1998-2002 Chrysler Sebring 1998-2002 Dodge Intrepid 1998-2002 Dodge Stratus	3,000 miles, or three months (severe) 5,000 miles, or six months (normal)
Lexus/Toyota	3.0L V-6	1997-2001 Lexus ES300 1999-2001 Lexus RX300 1997-2001 Toyota Camry 1997-2001 Toyota Avalon 1997-2001 Toyota Sienna 1999-2001 Toyota Camry Solara 2001 Toyota Highlander	5,000 miles, or four months (severe) 7,500 miles (normal)
Toyota	2.2L 4cyl	1997-2001 Toyota Camry 1996-1999 Toyota Celica	5,000 miles, or four months (severe) 7,500 miles (normal)
Saab	2.0L 4cyl Turbo 2.3L 4cyl Turbo	2000-2002 9-3 Hatchback 2000-2003 9-3 Convertible 2000-2003 9-5 1999 9-3 Viggen	5,000 miles, or six months (severe) 10,000 miles (normal)

(2) 2005 Car Care Guide, Motor Systems