



OIL REPORT

LAB NUMBER: D67388

UNIT ID: 01 X5-TR

REPORT DATE: 2/24/2009

CLIENT ID: 29730

CODE: 20/345

PAYMENT: CC: MC

| | | |
|------|--|---|
| UNIT | MAKE/MODEL: Transmission BMW Automatic | OIL TYPE & GRADE: Auto Transmission Fluid |
| | FUEL TYPE: | OIL USE INTERVAL: 83,000 Miles |
| | ADDITIONAL INFO: | |

| | | |
|--------|-----------------------|------------------------------|
| CLIENT | TOD DEBIE | PHONE: (562) 500-1994 |
| | 2190 PLACENTIA AVENUE | FAX: |
| | # C | ALT PHONE: |
| | COSTA MESA, CA 92627 | EMAIL: tod_debie@hotmail.com |

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| COMMENTS | TOD: Judging by what we found in this sample we don't think your BMW's transmission fluid has been changed before. All wear is above average but copper was the most out of line. Iron, copper, and tin all come from the clutch plates, while aluminum is from the torque converter. Silicon is likely from sealers used when assembling the transmission. Insolubles at this level may show sludge in the system. We think a few short oil runs should clean up your transmission. Try 10,000-15,000 miles on the next oil. The TAN read 3.6, showing the oil was very acidic. |
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| ELEMENTS IN PARTS PER MILLION | MI/HR on Oil | 83,000 | UNIT / LOCATION AVERAGES | | | | | | UNIVERSAL AVERAGES |
|-------------------------------|-------------------|----------|--------------------------------|-----|--|--|--|--|-----------------------|
| | MI/HR on Unit | 83,000 | | | | | | | |
| | Sample Date | 02/11/09 | | | | | | | |
| | Make Up Oil Added | | | | | | | | |
| | ALUMINUM | 90 | | 90 | | | | | |
| | CHROMIUM | 1 | | 1 | | | | | |
| | IRON | 192 | | 192 | | | | | |
| | COPPER | 417 | | 417 | | | | | |
| | LEAD | 52 | | 52 | | | | | |
| | TIN | 16 | | 16 | | | | | |
| | MOLYBDENUM | 2 | | 2 | | | | | |
| | NICKEL | 2 | | 2 | | | | | |
| | MANGANESE | 2 | | 2 | | | | | |
| | SILVER | 0 | | 0 | | | | | |
| | TITANIUM | 0 | | 0 | | | | | |
| | POTASSIUM | 3 | | 3 | | | | | |
| | BORON | 67 | | 67 | | | | | |
| | SILICON | 51 | | 51 | | | | | |
| | SODIUM | 9 | | 9 | | | | | |
| | CALCIUM | 79 | | 79 | | | | | |
| | MAGNESIUM | 2 | | 2 | | | | | 5 |
| | PHOSPHORUS | 241 | | 241 | | | | | 366 |
| | ZINC | 44 | | 44 | | | | | 47 |
| | BARIUM | 2 | | 2 | | | | | 11 |

Values
Should Be*

| | | | | | | | | |
|------------|-----------------------|------|---------|--|--|--|--|--|
| PROPERTIES | SUS Viscosity @ 210°F | 45.4 | 42-51 | | | | | |
| | cSt Viscosity @ 100°C | 5.84 | 4.8-7.9 | | | | | |
| | Flashpoint in °F | 390 | >335 | | | | | |
| | Fuel % | - | | | | | | |
| | Antifreeze % | - | | | | | | |
| | Water % | 0.0 | <0.1 | | | | | |
| | Insolubles % | 0.3 | <0.1 | | | | | |
| | TBN | | | | | | | |
| | TAN | 3.6 | | | | | | |
| | ISO Code | | | | | | | |

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

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