



UIN 04C4669

Gasoline Engine

Unit No. 2004 Porsche Cayenne

Unit:

Make Porsche

Model

Serial No.

Site William Gravely

Compartment:

Name Gasoline Engine

Make

Model

Serial No.

Capacity: 9.5 qt

Customer:

LN ENGINEERING
125 Gladiolus St
Mokenca IL 60954
USA

DIAGNOSIS

All wear levels appear within acceptable limits for first sample. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range.

Action: Resample at next recommended interval to monitor and establish wear trend.

ANALYST: LeDonna.Neu

| | | | | |
|---------------|--------|----------|---------|--------|
| LEGEND | | | | |
| | | | | |
| Normal | Severe | Abnormal | Caution | Normal |

| | |
|----------------------|-----------|
| DATE SAMPLED | 23-Oct-15 |
| DATE RECEIVED | 02-Nov-15 |
| DATE REPORTED | 04-Nov-15 |

| | | |
|--------------|-----|-------------|
| LAB NO. | | 43020761806 |
| SIF NO. | | 16240704 |
| TIME ON UNIT | Hrs | 134000 |
| TIME ON OIL | Hrs | 6100 |
| OIL BRAND | | Motul |
| OIL TYPE | | 8100 X-cess |
| OIL GRADE | | SAE 5W40 |
| OIL ADDED | qt | 1.0 |
| FILTER | Hrs | |
| OIL CHANGED | | Changed |
| WO NUMBER | | |

Metals (ppm)

| | |
|----------------|----|
| Iron (Fe) | 14 |
| Chromium (Cr) | 1 |
| Lead (Pb) | 3 |
| Copper (Cu) | 5 |
| Tin (Sn) | <1 |
| Aluminium (Al) | 2 |
| Nickel (Ni) | <1 |
| Silver (Ag) | <1 |
| Titanium (Ti) | <1 |
| Vanadium (V) | <1 |

Contaminants (ppm)

| | |
|---------------|---|
| Silicon (Si) | 6 |
| Sodium (Na) | 5 |
| Potassium (K) | 4 |

Additives (ppm)

| | |
|-----------------|------|
| Magnesium (Mg) | 75 |
| Calcium (Ca) | 2736 |
| Barium (Ba) | <1 |
| Phosphorus (P) | 990 |
| Zinc (Zn) | 1157 |
| Molybdenum (Mo) | 5 |
| Boron (B) | 41 |

Contaminants

| | |
|-----------|-------|
| Water (%) | <0.05 |
| Coolant | No |

Physical Tests

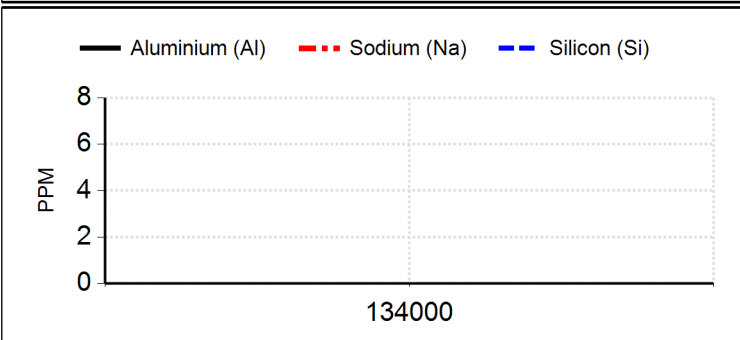
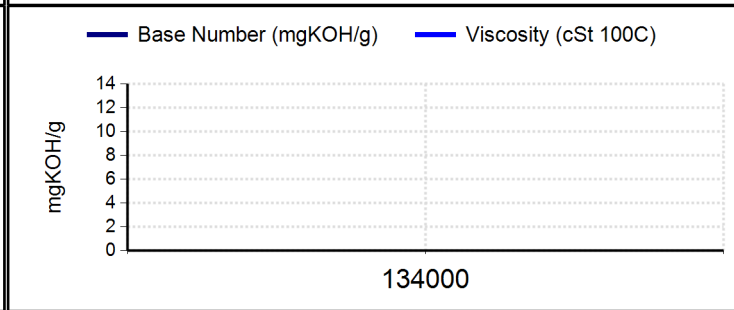
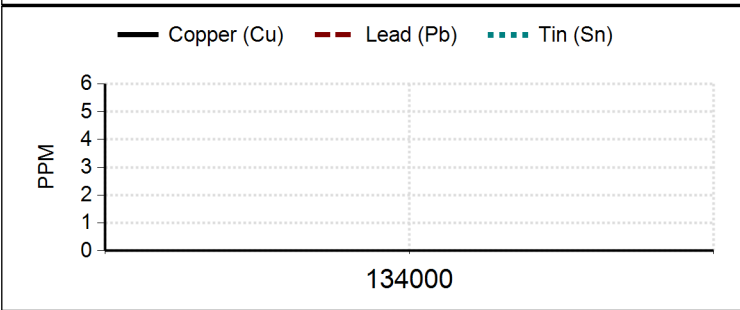
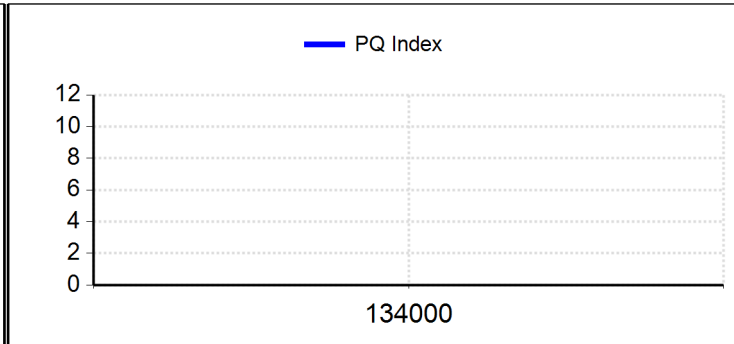
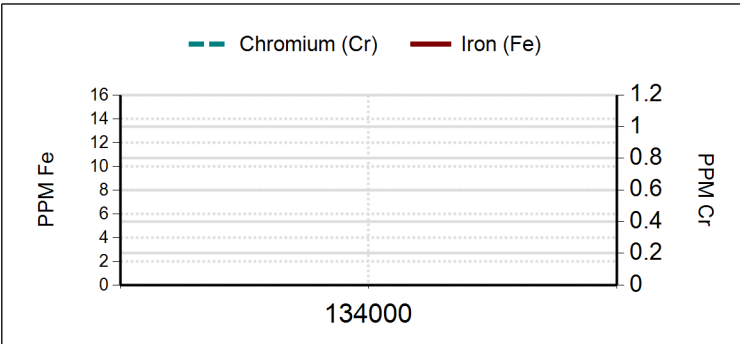
| | |
|----------------------|------|
| Viscosity (cSt 100C) | 12.1 |
| PQ Index | <10 |

Physical / Chemical

| | |
|-----------------------|-----|
| Base Number (mgKOH/g) | 4.4 |
|-----------------------|-----|



Right Solutions • Right Partner

UIN 04C4669


Filter Image

Filter patch test is not performed Contact laboratory for more information

- U.S. Laboratories**
- Atlanta, Georgia - 420**
3121 Presidential Drive
Atlanta, GA 30340
800.394.3669
 - Valley View, Ohio - 410**
6180 Halle Dr. Suite D
Valley View, OH 44125
800.726.5400
 - Kansas City, Kansas - 430**
935 Sunshine Road
Kansas City, KS 66115
800.332.8055
 - Phoenix, Arizona - 440**
3319 West Earl Drive
Phoenix, AZ 85017
800.445.7930
 - Portland, Oregon - 401**
4943 NW Front Avenue
Portland, OR 97210
800.770.4128
 - Sparks, Nevada - 400**
1375 Greg Street, Suite 104
Sparks, NV 89431
800.524.7848

- Canadian Laboratories**
- Burlington, Ontario - 450**
1240 Burloak Drive, Unit 6
Burlington, ON L7L 6B3
877.732.9559
 - Edmonton, Alberta - 402**
10717-176 Street
Edmonton, AB T5S 1K1
888.489.0057
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Houston, TX 77099
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 - New Zealand**
Wellington
 - Southeast Asia**
Kuala Lumpur, Singapore
 - Europe**
Prague

TEST METHODS:

| | |
|------------------------------|---------------------------------|
| Acid Number: | ASTM D974/D664 |
| Base Number: | ASTM D4739 |
| Base Number (Perchloric): | ASTM D2896 |
| Fuel Dilution by GC: | ASTM D3524/D7593 |
| Fuel Dilution Visc/Setaflash | ASTM D445/D7279/D3828 |
| Fuel Soot ATR/IR: | ASTM D7686 |
| Glycol: | ASTM D2982 |
| Metals by ICP AES: | ASTM D5185 |
| Ox, NOx, SOx, FTIR: | ASTM D7418/D7414/D7415 D7624 |
| Particle Count: | ASTM D7647 / ISO 11500, 4406 |
| Viscosity: | ASTM D445 / D7279 |
| Water KF: | ASTM E203 Mod / D6304C |
| Water Crackle: | In House |

Since services are based on samples and information supplied by others, and since corrective actions, if any, are necessarily taken by others, these services are rendered without any warranty or liability of any kind beyond the actual amount paid to ALS Tribology for the services. Reported recommendations are based on interpretations of the generated test results and historical data. Certain test results appearing in this report may have been tested at other ALS laboratories within the Tribology divisional network.

Ln Engineering
 Attn: Charles Navarro
 125 Gladiolus St
 Momence IL 60954
 USA