



NGEO

Natural Gas Engine Oils

Exceptionally high-performance oils with specialty additive packages developed by Lubrizol and ProOne's proprietary XPL+ technology. Proven to provide incomparable TAN performance and TBN retention for better operating efficiencies and cost control.

Premium

Exceptional NGEO for standard operations

Performance

25-35% increase in oil drain intervals

Performance +

50-100% increase in oil drain intervals

Meets or Exceeds Specs for:

- Cummins
- MWM
- Mann
- Dresser Rand
- Guascor
- Wartsila 4T
- Caterpillar

And Approved for:

- Waukesha
- Jenbacher

Typical Properties

| NAME | ProOne NGEO | ProOne NGEO | ProOne NGEO |
|-----------------------|----------------|--------------------|-------------------------|
| Viscosity Grade | SAE 40 | SAE 40 | SAE 40 |
| Formulation (%wt) | PREMIUM | PERFORMANCE | PERFORMANCE PLUS |
| Chemical & Physical | | | |
| D445_40 cSt | 127.6 | 129.4 | 130.5 |
| D445_100 cSt | 13.5 | 13.9 | 13.9 |
| Viscosity Index | 101 | 104 | 103 |
| TBN (D2896) | 5.1 | 5.5 | 6.0 |
| % Sulfated Ash | 0.5 | 0.5 | 0.5 |
| %w Calcium | 0.123 | 0.122 | 0.122 |
| %w Phosphorus | 0.031 | 0.029 | 0.030 |
| %w Zinc | 0.034 | 0.030 | 0.032 |
| Flash Point (D92), °C | - | 252 | 254 |
| Pour Point, °C | - | - | -21 |

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Competitive Benchmarking

Bench tests used to evaluate the performance of stationary gas lubricants prior to field testing.

Industry Tests

| | |
|------------------------|---|
| CEC L-85-99 PDSC | Oxidation |
| KHT @ 280, 285 & 290°C | Deposits |
| D6594 HTCBT | Copper Corrosion |
| ISOT | Viscosity Increase, EOT TAN, %TBN Retention, Copper Corrosion |

Lubrizol Proprietary Tests

| | |
|-----------------------------|-----------------------------------|
| Panel Coker Test | Oxidation |
| Nitration Test | Deposits |
| 3D HFRR Test | Copper Corrosion |
| Bulk Oil Viscosity Increase | Viscosity Increase, EOT TAN, %TBN |
| Sludge Dispersancy Test | Sludge Control |

Performance Testing

In competitive benchmarking tests of the base oil and additives by Lubrizol, ProOne Performance and Performance Plus formulas outperformed 12 competitive stationary gas lubricants across the board.



- EOT (End of test)TAN
- TBN Retention
- PDSC Oxidation
- KHT 280C/285C/290C Deposits
- HTCBT Copper Corrosion
- Sludge Dispersancy
- 3D HFRR HFRR Wear & Film Thickness

Competitive Benchmarking

| | Panel Coker | PDSC | Nitration Test | | | | KHT 280C | KHT 285C | KHT 290C | HTCBT Cu | Sludge | ISOT | | | | VIS INC | 3D HFRR | | | Ranking |
|---------------------------------------|-------------|------|----------------|-----|----------|---------|----------|----------|----------|----------|--------|---------|---------|-----------|-----|---------|---------|------------|-----|-------------|
| | | | RONOZ | C=O | %TBN RET | EOT TAN | | | | | | VIS INC | EOT TAN | % TBN RET | Cu | | WEAR | FILM THICK | COF | |
| PRO-ONE NGENO PERFORMANCE PLUS | 2 | 3 | 6 | 4 | 3 | 2 | 2 | 2 | 1.5 | 4 | 3.5 | 5 | 5 | 7 | 7 | 4 | 4 | 3 | 3 | 71 |
| OIL A | 0 | 3 | 4 | 4 | 4 | 1 | 2 | 2 | 1 | 1.5 | 1 | 5 | 6 | 9 | 8 | 5 | 3 | 2 | 2 | 63.5 |
| PRO-ONE NGENO PERFORMANCE | 2 | 3 | 4 | 3 | 1 | 2 | 2 | 1 | 0 | 4 | 3 | 5 | 5 | 6 | 6.5 | 4 | 4 | 2 | 3 | 60.5 |
| OIL B | 2 | 4 | 4 | 3 | 3 | 1 | 2 | 1.5 | 1 | 1.5 | 1 | 5 | 4 | 9 | 6 | 5 | 2 | 0 | 2 | 57 |
| OIL C | 2 | 2 | 5 | 6 | 5 | 2 | 3 | 1.5 | 1 | 1.5 | 2 | 5 | 3.5 | 4 | 6.5 | 4 | 1 | 0 | 2 | 57 |
| OIL D | 3 | 1.5 | 4 | 6 | 5 | 2 | 2 | 1 | 1 | 4 | 2 | 4 | 2 | 4 | 4 | 5 | 4 | 0 | 2 | 56.5 |
| OIL E | 3 | 0 | 5 | 3 | 0.5 | 2 | 1 | 1 | 1 | 4.5 | 5 | 5 | 3.5 | 5 | 3 | 4 | 3 | 2.5 | 2 | 54 |
| PRO-ONE NGENO PREMIUM | 2 | 1 | 5 | 5 | 2 | 2 | 0 | 1 | 0 | 3 | 2 | 5 | 4 | 5 | 4.5 | 4 | 5 | 0 | 2 | 52.5 |
| OIL F | 3 | 2 | 4 | 6 | 5 | 1 | 2 | 1 | 0 | 1.5 | 3 | 3 | 2 | 5 | 5 | 2.5 | 1 | 0 | 3 | 50 |
| OIL G | 2 | 2 | 0 | 2 | 2 | 1 | 1 | 1 | 0 | 4.5 | 3 | 4 | 3.5 | 6 | 8 | 5 | 3 | 0 | 2 | 50 |
| OIL H | 2 | 1.5 | 3 | 6 | 5 | 2 | 1 | 1 | 1 | 3 | 1 | 0 | 1 | 6 | 1 | 4 | 4 | 2.5 | 3 | 48 |
| OIL I | 0 | 1.5 | 4 | 5 | 5 | 2 | 1 | 1.5 | 1 | 1.5 | 2 | 3 | 3 | 3 | 8 | 2.5 | 1 | 0 | 2 | 47 |
| OIL J | 2 | 0 | 0 | 5 | 3 | 2 | 0 | 1 | 0 | 4.5 | 2 | 1.5 | 1 | 5 | 4 | 0 | 6 | 4 | 5 | 46 |
| OIL K | 2 | 3 | 0 | 1 | 0 | 1 | 1 | 1.5 | 1 | 4.5 | 2 | 3 | 3 | 4 | 4 | 2.5 | 3 | 2.5 | 2 | 41 |
| OIL L | 2 | 0 | 2 | 1 | 1 | 2 | 1 | 1.5 | 1 | 4.5 | 3 | 1.5 | 1 | 2 | 1 | 0 | 3 | 0 | 1.5 | 29 |

*Overall Ranking