



## VP Lubricant Base Oils Typical Oil Properties

VP Lubricant Base Oils are premium-quality, fully refined and dewaxed paraffinic base oils. These oils are well suited for formulating a wide variety of automotive, industrial and marine lubricants, as well as, diluents for additives and process oil applications. Physical properties are listed below and may vary slightly.

| <b>VP</b>     |                             | <b>165</b>                   | <b>500</b> | <b>700</b> | <b>150 BS</b> |
|---------------|-----------------------------|------------------------------|------------|------------|---------------|
| <b>METHOD</b> | <b>TEST</b>                 | <b>TYPICAL PROPERTIES</b>    |            |            |               |
| VISUAL        | Appearance                  | <-----CLEAR AND BRIGHT-----> |            |            |               |
| D4052         | API Gravity                 | 30.1                         | 28.7       | 26.8       | 24.9          |
| CALC          | Lbs/Gallon @<br>60°F/15.6°C | 7.30                         | 7.36       | 7.46       | 7.45          |
| D445          | Viscosity                   |                              |            |            |               |
|               | @ 40 °C, cSt                | 32.8                         | 91.5       | 146.4      | 488.2         |
|               | @ 100 °C, cSt               | 5.4                          | 10.5       | 14.0       | 31.7          |
|               | @ 100 °F, SUS               | 157                          | 477        | 770        | 2620          |
| D2270         | Viscosity Index             | 98                           | 96         | 91         | 96            |
| D5293         | CCS @ -25°C, Cp             | -                            | -          | -          | -             |
|               | @ -20 °C, Cp                | 2404                         | -          | -          | -             |
| D97           | Pour Point, °C              | -7                           | -7         | -7         | -5            |
| D92           | COC Flash Pt, °C            | 219                          | 259        | 272        | 306           |
| D1500         | ASTM Color                  | L0.5                         | L1.0       | L1.5       | L3.0          |
| D4294         | Sulfur, Wt.%                | 0.38                         | 0.53       | 0.90       | 1.10          |
| D2887         | GC Sim Distillation         |                              |            |            |               |
|               | Boiling Range ,°C           |                              |            |            |               |
|               | 5%                          | 307                          | 304        | 315        | 258           |
|               |                             | 364                          | 415        | 426        | 387           |
|               | 95%                         | 519                          | 547        | 555        | 563           |
|               | % Off at 700°F/371°C        | 7.4                          |            |            |               |
| D5800         | Noack Vol, Wt.%             | 15.4                         |            |            |               |
| D4530         | CCR, Wt.%                   | <0.01                        | 0.03       | 0.05       | 0.52          |
| D2007         | Clay Gel Analysis           |                              |            |            |               |
|               | Asphaltenes, Wt.%           | <0.1                         | <0.1       | <0.1       | <0.1          |
|               | Aromatics, Wt.%             | 31.1                         | 28.0       | 33.7       | 36.1          |
|               | Polar Cpds, Wt.%            | 0.3                          | 0.4        | 0.7        | 3.2           |
|               | Saturates, Wt.%             | 68.6                         | 71.6       | 65.4       | 60.7          |

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