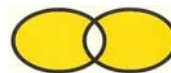


UniSource Energy, Inc.
 Technical Grade White Oil
 Typical Properties



| | |
|---------------|----------------------|
| Supplier Name | UNISOURCE |
| Product Name | UNIPAR® SH 220 EP |

| Test Description | ASTM NO. | |
|----------------------------------|----------|-------------|
| Specific Gravity @ 60°F/ 60°F | D 287 | 0.8035 |
| Gravity, °API @ 60°F | | 44.6 |
| Density (Lb/Gal) @ 60°F | | 6.69 |
| Color, Saybolt | D 156 | 30 |
| Cloud point, °F (°C) | D 2500 | 2 (-16.7) |
| Viscosity | | |
| SSU @ 100°F | D 445 | 34.3 |
| SSU @ 210°F | | |
| cSt @ 40°C | D 445 | 2.51 |
| cSt @ 100°C | | |
| Distillation Range, °F (°C) | D 86 | |
| IBP | | 463 (239) |
| 5% | | 473 (245) |
| 10% | | 475 (246) |
| 50% | | 486 (252) |
| 90% | | 507 (264) |
| 95% | | 512 (267) |
| EP | | 530 (277) |
| Kauri Butanol | D 1133 | 25.0 |
| Aniline point, °F (°C) | D 611 | 180 (82.2) |
| Flash point, Closed Cup, °F (°C) | D 93 | 220 (104.4) |
| Pour point, °F (°C) | D 97 | -5 (-20.6) |
| Refractive Index, 20 °C (68 °F) | D 1218 | 1.4442 |
| Aromatics, wt % | | 1 |

Chemical Abstract # 8042-47-5
 Jan-00

*The values shown here are representative of current production.
 Some are controlled by manufacturing specifications, while others are not.
 All may vary within modest ranges.*