

# Product Information



## Equipower™ Ultra HVI Hydraulic Oil

(6522, 6532, 6546)

### *Extended-Life Oil Provides Smooth Hydraulic Power*

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A long-lasting, nonfoaming oil designed to extend the life of hydraulic systems, Equipower™ Ultra HVI Hydraulic Oil (6522, 6532, 6546) offers superior protection against water contamination, rust, corrosion and oxidation. This high viscosity index formulation contains Monolec®, LE's exclusive wear-reducing additive, and outperforms other commercial hydraulic oils in thermal, oxidative and hydrolytic stability. It is recommended for hydraulic applications with operating temperatures that fluctuate widely on a daily basis.

#### **Beneficial Qualities**

##### *Long-Lasting, Cost-Saving Service*

- Provides longer service life than other commercial hydraulic oils
- Extends drain intervals when properly maintained
- Reduces oil consumption, including need for make-up oil
- Minimizes labor and downtime required for oil changes
- Eliminates fade and chatter by breaking up foam

##### *High Viscosity Index Formula*

- Ensures smooth, uninterrupted power flow over wide temperature range
- Increases energy efficiency, which also reduces greenhouse gas emissions

##### *Wear Protection*

- Protects metal components from scuffing, galling and other wear
- Minimizes equipment downtime and failure
- Is compatible with most seals and hoses
- Reduces need for replacement parts and labor

##### *Water, Rust, Corrosion & Oxidation Resistance*

- Separates rapidly from water, allowing for easy water drain-off
- Prevents rust and corrosion with R & O inhibitors
- Provides superior oxidation resistance
  - o Reduces sludge and varnish formation
  - o Prevents plugged orifices and sticky valves
  - o Maintains system cleanliness



#### **Proprietary Additives**

LE's proprietary additives are used exclusively in LE lubricants. Equipower™ Ultra HVI Hydraulic Oil contains Monolec.

**Monolec®** wear-reducing additive creates a single molecular lubricating film on metal surfaces, vastly increasing oil film strength without affecting clearances. An invaluable component in LE's engine oils, industrial oils and many of its other lubricants, Monolec allows opposing surfaces to slide by one another, greatly reducing friction, heat and wear.

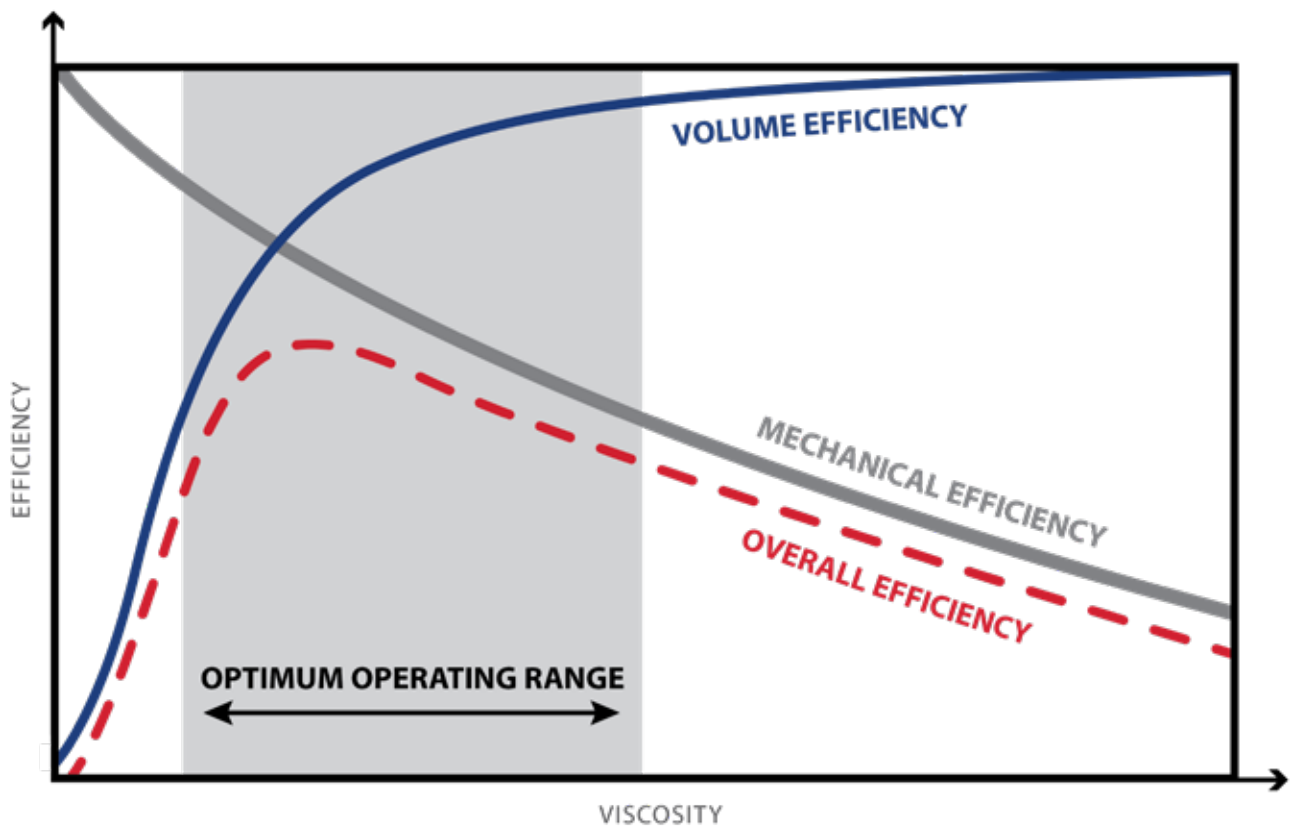




# Equipower™ Ultra HVI Hydraulic Oil

## Relationship of Viscosity to Pump Efficiency

Hydraulic pumps convert mechanical energy from electric motors or internal combustion engines into fluid flow; however, some energy is always lost during this process. Mechanical losses occur due to fluid friction at higher viscosities, while volumetric losses due to internal fluid leakage occur at lower viscosities. Each hydraulic pump has an optimum operating viscosity range that will provide maximum pump efficiency by keeping mechanical and volumetric losses to a minimum.

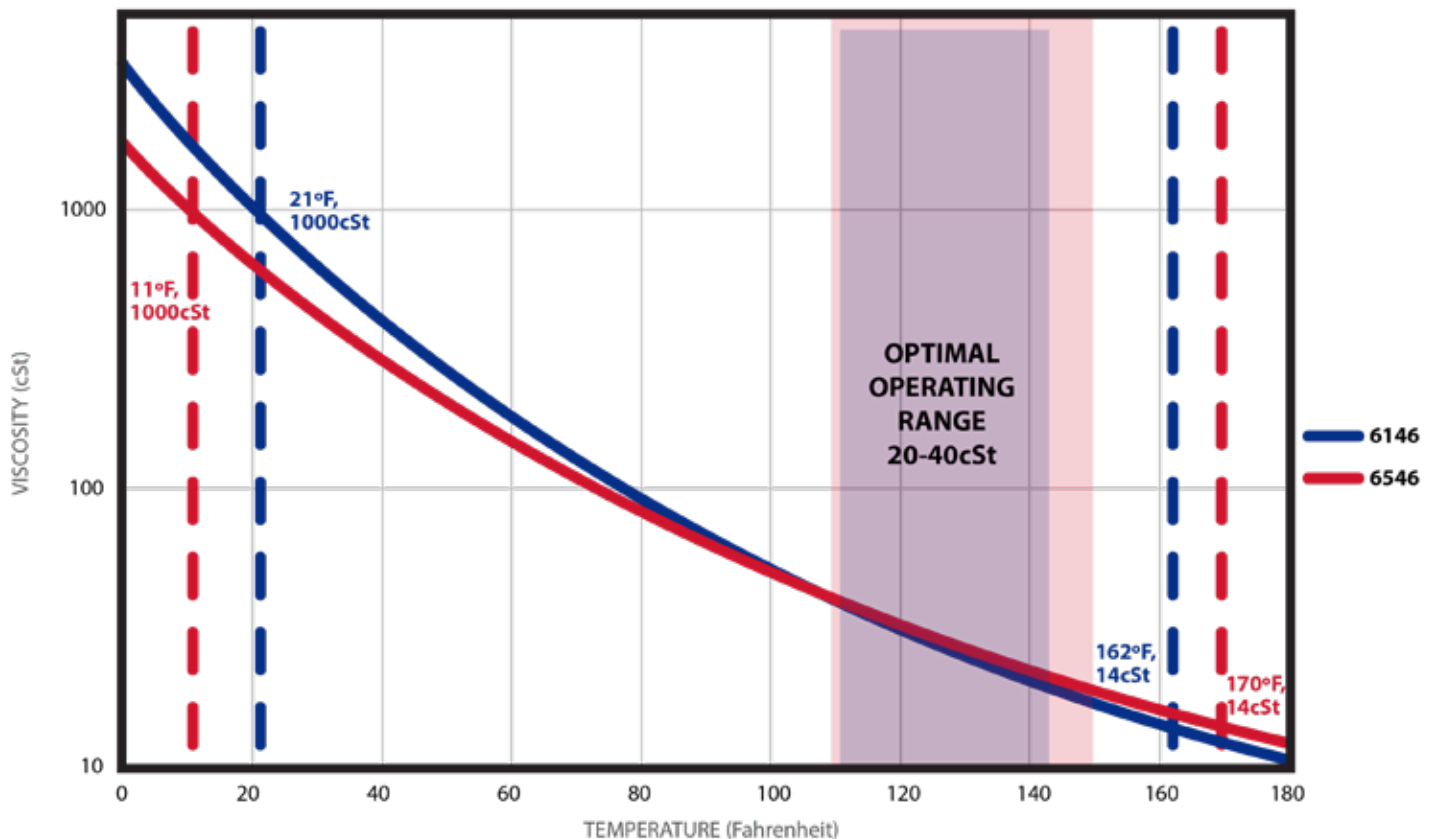




# Equipower™ Ultra HVI Hydraulic Oil

## Relationship of Viscosity to Optimal Operating Temperature

A hydraulic pump manufacturer states that an operating fluid viscosity of 20-40 cSt provides optimal energy efficiency in a piston pump. They also state that the fluid viscosity at cold startup should not exceed 1,000 cSt, or fall below 14 cSt at any time during operation. The high viscosity index of LE's Equipower Ultra HVI Hydraulic Oil enables the fluid to remain within the optimal operating viscosity range throughout a wider operating temperature range than non-HVI fluids. Ultimately, this helps increase the bottom line by increasing pump efficiency in the form of reduced mechanical and volumetric losses. Less energy consumption also yields a smaller carbon footprint by reducing greenhouse gas emissions.





## Equipower™ Ultra HVI Hydraulic Oil

	<u>6522</u>	<u>6532</u>	<u>6546</u>
<b>Color</b>	Red	Red	Red
<b>ISO VG</b>	22	32	46
<b>Relative Density @ 60°F/60°F, ASTM D1298</b>	0.867	0.853	0.862
<b>Viscosity @ 100°C, cSt, ASTM D445</b>	7.50	6.31	8.14
<b>Viscosity @ 40°C, cSt, ASTM D445</b>	22.0	32.2	46.3
<b>Viscosity Index ASTM D2270</b>	350	150	150
<b>Flash Point °C (°F), (COC), ASTM D92</b>	150 (302)	214 (417)	219 (426)
<b>Pour Point °C (°F), ASTM D97</b>	<-60 (<-76)	-42 (-44)	-42 (-44)
<b>Rust Test 4 hrs @ 60°C, DI H<sub>2</sub>O, ASTM D665A</b>	Pass	Pass	Pass
<b>Rust Test 4 hrs @ 60°C, Sea H<sub>2</sub>O, ASTM D665B</b>	Pass	Pass	Pass
<b>Copper Corrosion 3 hrs @ 100C, ASTM D130</b>	1b	1b	1b
<b>Emulsion Characteristics @ 54°C, oil-water-emulsion/minutes, ASTM D1401</b>	40-40-0/15	40-40-0/10	40-40-0/10
<b>Air Release 9.0-90.0 cSt @ 40°C: 50°C, minutes, ASTM D3427</b>	2.5	2.0	6.68
<b>Dielectric Strength, Kv, ASTM D877</b>	≥40	≥40	≥40

### Performance Requirements Met or Exceeded

- AIST US Steel 126, 127 (6532 & 6546)
- ASTM D6158 (HV)
- Bosch-Rexroth RDE 90235 (6532 & 6546)
- DIN 51524-3 (HV)
- Eaton E-FDGN-TB002-E
- Fives (Cincinnati Machine) P68 (6532)
- Fives (Cincinnati Machine) P70 (6546)
- GB 11118.1-2011 (L-HV)
- GM LS-2 (6532)
- ISO 11158 (HV)
- JCMAS P041 HK (6532 & 6546)
- Parker (formerly Denison) HF-0
- SAE MS 1004 (HV)
- SEB 181222

### Typical Applications

- Hydraulic pumps, motors and systems:
  - o Construction equipment
  - o Well service equipment
  - o Utility service boom trucks
  - o Forklifts
  - o In-plant stationary applications

### Recommendation

- This product should not be used for fire-resistant hydraulic fluid applications.