



## Extended Esterex™ polyol ester portfolio

Introducing Esterex NP344 and Esterex POE68, extensions of ExxonMobil Product Solutions' portfolio. If your challenge is to formulate high performance lubricants that meet the current trends for long-lasting, clean, varnish-free performance and high-temperature stability, then we have the solution.

| Category       | Grade          | KV at 100°C cSt | KV at 40°C cSt | Viscosity index | Pour point °C    | Flash point (COC) °C |
|----------------|----------------|-----------------|----------------|-----------------|------------------|----------------------|
|                |                | ASTM D445       | ASTM D445      | ASTM D2270      | ASTM D97 / D5950 | ASTM D92             |
| Commercialized | Esterex™ NP343 | 4.3             | 19             | 136             | -48              | 257                  |
| Experimental   | Esterex™ NP344 | 4.7             | 21             | 148             | -45              | 262                  |
| Commercialized | Esterex™ NP451 | 5               | 25             | 130             | -60              | 255                  |
| Experimental   | Esterex™ POE68 | 8.3             | 64.6           | 101             | -39              | 254                  |
| Experimental   | Esterex™ P131  | 15              | 116.5          | 120             | -26              | 263                  |

### Performance benefits



Long-lasting, clean and varnish-free performance in formulations



Low volatility and high temperature resistance



High performance in wide temperature range



Excellent hydrolytic and thermal stability



Improved energy efficiency from excellent lubricity properties

### Application flexibility

Esterex polyol esters can be used in a broad range of automotive and industrial applications, including:

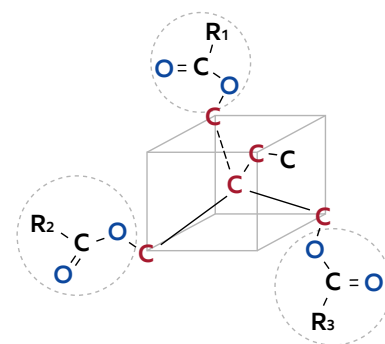
- Compressor
- Refrigeration compressor
- Hydraulic
- Turbine
- Industrial gear
- Paper machine
- Food process machinery
- Heat transfer
- Chain
- Greases

## Performance benefits

Esterex™ NP344 and NP343 share the same superior characteristic performance with a comparable viscosity, molecular structure, and performance characteristic.

### NP344 benefits vs. NP343

- Higher viscosity index
- Higher flash point
- Narrower molecule weight distribution
- Unified structure
- Cost saving choice



NP344: R1=R2=R3

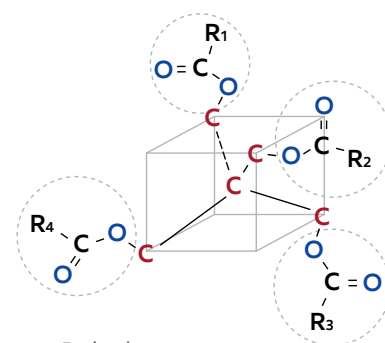
### Esterex™ P131

As a TMP stearic polyol ester, P131 provides the highest viscosity of this family. It offers higher viscosity for automotive applications with its KV100°C around 15 cSt, or as an ISO VG 100/110 base stock for Industrial applications, while offering its polyol ester advantages.

### Esterex™ POE68

Esterex POE68 is a high viscosity polyol ester that is ideal for applications with ISO VG 68 viscosity grade formulations. A group of Esterex POE experimental esters is available to blend a wide range of ISO VG formulations.

| ISO viscosity grade | Midpoint kinematic viscosity, cSt @40°C | Kinematic viscosity, cSt @40°C |           | Esterex™ grade (experimental)     | Kinematic viscosity, cSt @40°C** |
|---------------------|---|--------------------------------|-----------|-----------------------------------|----------------------------------|
|                     |   | Minimum                        | Maximum   |                                   |                                  |
|                     | ASTM D445                               | ASTM D445                      | ASTM D445 |                                   | ASTM D445                        |
| *ISO VG 15          | 15                                      | 13.5                           | 16.5      | Esterex POE15 experimental        | 15.7                             |
| *ISO VG 22          | 22                                      | 19.8                           | 24.2      | Esterex POE22 experimental        | 23.2                             |
| *ISO VG 32          | 32                                      | 29.8                           | 35.2      | Esterex POE32 experimental        | 32.0                             |
| *ISO VG 46          | 46                                      | 41.4                           | 50.6      | Esterex POE46 experimental        | 46.0                             |
| *ISO VG 68          | 68                                      | 61.2                           | 74.8      | <b>Esterex POE68 experimental</b> | 64.6                             |
| *ISO VG 100         | 100                                     | 90.0                           | 110.0     | Esterex POE100 experimental       | 97.0                             |
| ISO VG 150          | 150                                     | 135.0                          | 165.0     |                                   |                                  |
| *ISO VG 220         | 220                                     | 198.0                          | 242.0     | Esterex POE220 experimental       | 226.0                            |
| ISO VG 320          | 320                                     | 288.0                          | 352.0     |                                   |                                  |



Polyol ester  
- Tetrahedron center  
- Spherical molecule

\* Non-commercialized grades, if you have any interests, please reach out to your ExxonMobil Synthetics contacts for more details.

\*\* Note: Kinematic viscosity (cst, @40°C) of Esterex POE experimental grades represent a spot measurement (that may vary with time).

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