TruVis™ ESTERS

# Base Stocks & Additives
# SELECTION GUIDE


TEKNOR APEX

Dynamic Stability™

# TruVis Esters
## Base Stocks & Additives

| | PRODUCT NAME | DESCRIPTION | ISO VG | INDUSTRIAL | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Gear | Hydraulic | Compressor | Turbine | Chain | Grease |
| **Mono Esters** | | | | | | | | | |
| OLEO | TruVis M1008 | 2-Ethylhexyl oleate<br>*Environmentally friendly* | 8 | | ● | | | | ● |
| | TruVis TDS | Isotridecyl stearate<br>*Environmentally friendly* | 17 | | | | | | |
| **Diesters** | | | | | | | | | |
| ADIPATE | TruVis A80 | Di-octyl adipate (DOA) | 8 | ● | ●<br>EAL-HEES | | | | ● |
| | TruVis A85 | Di-isooctyl adipate (DIOA) | 9 | ● | ● | ● | | | ● |
| | TruVis A90 | Di-isononyl adipate (DINA) | 11 | ● | ● | | | | ● |
| | TruVis A100 | Di-isodecyl adipate (DIDA) | 13 | ● | ● | ● | | | ● |
| | TruVis A130 | Di-isotridecyl adipate (DITA/DTDA) | 27 | ● | ●<br>EAL-HEES | ● | | ▲<br>300 °C | ● |
| SPECIAL | TruVis D2020 | 2-Ethylhexyl dodecanedioate | 14 | | | | | | |
| | TruVis P2290 | 2-Ethylhexyl dimerate | 90 | ● | | | | ● | ● |
| TRIMELLITATE | TruVis TM350 | Hexyl trimellitate | 34 | ● | | ● | | ▲ | ● |
| | TruVis TM500 / TM1055 | 810 Trimellitate | 50 / 52 | ● | | ● | | ▲ | ● |
| | TruVis TM850 | Trioctyl trimellitate (TOTM) | 85 | ● | | | | ▲ | ● |
| | TruVis TM900 | Trinonyl trimellitate (TNTM) | 86 | ● | | ● | | ▲ | ● |
| | TruVis TM1300 | Triisodecyl trimellitate (TIDTM) | 132 | ● | | ● | | ▲ | ● |
| | TruVis TM2200 | Trisodecyltridecyl trimellitate (TIDTDTM) | 220 | ● | | ● | | ▲ | ● |
| | TruVis TM2250 | Trimellitate Ester Blend (TIDTDTM/TTDTM) | 220 | ● | | ● | | ▲ | ● |
| | TruVis TM3200 | Tritridecyl trimellitate (TTDTM) | 320 | ● | | ● | | ▲<br>300 °C | ●<br>High Temp |
| **Polyol Esters** | | | | | | | | | |
| NEOPENTYL GLYCOL | TruVis P2207 | Neopentyl glycol ester | 8 | | | ■ | | | |
| TRIMETHYLOLPROPANE | TruVis P3020 | Trimethylolpropane C8C10 (TMP C8C10)<br>*NSF HX1 Food Grade* | 19 | □ | ●<br>EAL-HEES | ● | ● | ▲<br>300 °C | ●<br>EAL |
| | TruVis P3050 | Trimethylolpropane trioleate<br>*Environmentally friendly* | 46 | ● | ●<br>HFD-U | | | | ● |
| | TruVis P3058 | Trimethylolpropane ester | 48 | | | ● | | | |
| | TruVis P3121 | Trimethylolpropane C9 (TMP C9)<br>*NSF HX1 Food Grade* | 21 | ● | | ● | | ▲<br>300 °C | ● |
| PENTAERYTHRITOL | TruVis P4032 | Pentaerythritol | 32 | | | ■ | | ▲ | ● |
| | TruVis P4068 | Pentaerythritol | 68 | | | ■ | | | |
| | TruVis P4246 | Pentaerythritol | 46 | | | ■ | | | |
| | TruVis P4268 | Pentaerythritol | 68 | | | ■ | | | |
| BLEND | TruVis P4232 | Neopentyl glycol/pentaerythritol blend | 32 | | ● | ■ | ● | | |

**Additional usage comments:**

□ For use in Wind Turbine Gear Applications ■ For Refrigeration ▲ For use in Oven Chain Oils

# TruVis Esters

## Base Stocks & Additives

| TRANSPORTATION | | | | | METALWORKING FLUID | | | | ADDITIVES | |
|---|---|---|---|---|---|---|---|---|---|---|
| Engine | Gear | Axle | 2-Stroke | 4-Stroke | Water Miscible | Neat Oil | Steel Rolling | Aluminum Processing | Lubricity Additive | Friction Modifier |
| | | | | | | | | | | |
| | | | ● | | ● | ● | | | | ● |
| | | | | | Cutting & Forming | | | | | |
| | | | | | Emulsifiable | | | | | ● |
| | | | | | | | | | | |
| | ● | ● | ● | ● | | ● | | | ● | |
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TruVis™ ESTERS

Synthetic esters, with their polarity and uniform structure, provide multiple high performance functions in lubricants:

- As a base stock or as an additive, esters improve lubricity, improve the solubility of additives, have an affinity for metal surfaces, and improve cleanliness and sludge control.
- Versus mineral oils, the ester structure offers lower volatility at lower molecular weight and lower viscosity.
- Esters can be selected to provide extreme high temperature performance, extreme low temperature performance, or both.
- Esters provide or enhance seal and gasket compatibility.
- Esters generally offer high thermal-oxidative stability.

Esters can be combined with PAO's or mineral oils to improve seal swell, solubilize additives, reduce volatility and improve energy efficiency.

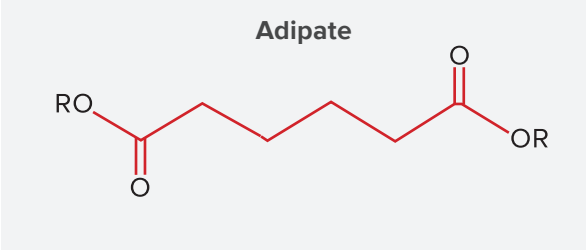
Many esters are used in environmentally acceptable lubricant applications due to their biodegradability and low toxicity.

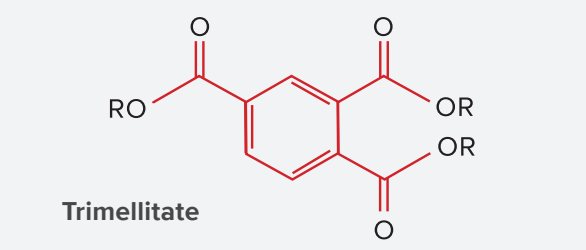
# Synthetic Ester Types:

## Diesters

Adipates make a great base stock or blend component when biodegradability or high-temperature cleanliness is important. Diesters may also be used in combination with PAO's or Group III's for engine, compressor, gear, transmission, hydraulic and other oils.

Trimellitate esters are often a cost effective alternative to high viscosity polyol esters. They are used where low volatility, thermal stability, and high lubricity are needed. Applications include compressor lubes, gear oils, chain lubes, and greases.

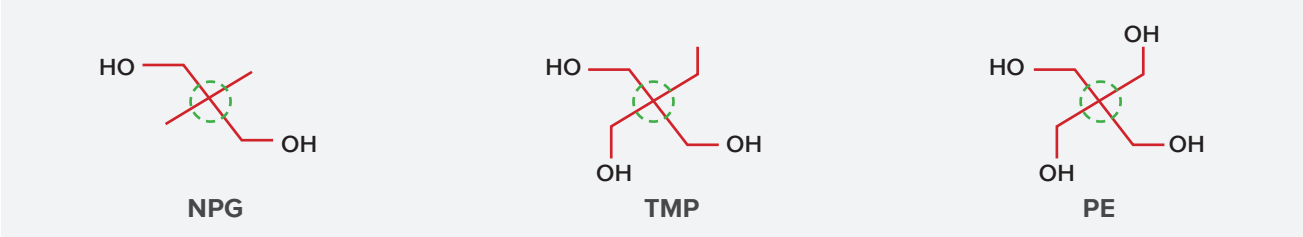



R = Alkyl group

## Polyol Esters

Esters of Polyols, such as NeoPentyl Glycol (NPG), Trimethylol Propane (TMP), and PentaErythritol (PE), get their high performance and stability from their core Quaternary Carbon structure. That, along with their high polarity, further attracts the esters to metal surfaces which enhances lubricity. From refrigeration lubes to oven chain lubes, polyols can be customized for almost any application.




# Performance Advantages:

**Gears, including industrial, automotive & wind**

- High or low viscosity performance
- High viscosity at elevated temperatures
- Improved thermal & oxidative stability
- Great solubilizing characteristics

**Chain Oils**

- High temperature performance
- Low coking, low residue

**Hydraulic Fluids**

- Biodegradability
- Fire resistance, low volatility

**Compressor**

- High or low viscosity performance
- High thermal and oxidative stability
- Natural detergency, low varnish
- Polyol esters are primary base stock for HFC refrigerants

**Engine Oils**

- Meet increasing demand for low viscosity, high VI
- Low pour point, low cold crank viscosity
- Lower volatility
- Solvency, seal swell, and lubricity

**Greases**

- Great for high and low-temperature application

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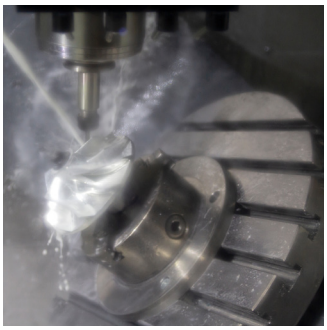

## Markets for Esters

- ☑ Automotive
- ☑ Metalworking
- ☑ Construction
- ☑ Industrial
- ☑ Power Generation
- ☑ Marine






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