

There are four types of hydraulic environmental (HE) classes of hydraulic fluids as defined by ISO15380.

- HETG – Triglyceride, animal and vegetable oils
- HEPG – Polyglycol
- HEES – Synthetic esters, unsaturated and saturated
- HEPR – Polyalphaolefins (PAO's) and related products

Terresolve hydraulic lubricants fall into two categories, HETG and HEPR. The HEPG and HEES classes of lubricants are environmentally compatible, but they do not stand up to the performance characteristics of Terresolve's lubricants.

Terresolve formulates the HETG series of products as direct performance crossovers to petroleum based hydraulic fluids. These products are designed for light to medium duty systems with operating temperatures ranging from -30°F to 200° F and pressures up to 5,000 psi.

Terresolve formulates the HEPR series of products as extreme pressure and extreme temperature hydraulic fluids. These products are designed for heavy duty systems with operating temperatures ranging from -50° F to 250° F and pressure spikes up to 10,000 psi. These products are recommended for marine applications in which water contamination is an issue.

Though they may sound attractive in sales literature, most HEPG products are designed specifically for fire resistant applications. HEPG products attract water which can reduce viscosity and lubrication leading to an increase in wear and rust. HEPG products are also not compatible with traditional components in hydraulic systems and need specific seals, hoses, paints and coatings to work for any length of time. Another draw-back is they are not compatible with oil based products. Mixing between the two products can create emulsions which can lead to plugging and pump cavitations. Systems using these fluids need to be designed around the fluid which can be too capital intensive for many businesses.

Formulating with HEES products depends on the application and the willingness to monitor the oil on a long term basis. HEES products need to be kept clean and very dry, as they will react with water and heat turning the ester compound back into an acid and an alcohol. If there is an increase of acid in the lubricant, it can lead to surface rust and attack certain rubbers and seals. HEES product compatibility with specific rubber and seal compounds must be studied prior to use. Hot humid climates and marine environments should also be avoided with HEES products.