

*'Providing Tribological Solutions'*

## PHOSPHATE ESTER FLUID TESTS

PARAMETER	EXPLANATION
<b>Color</b>	Scale goes from 0 (clear) to 8 (black). Some darkening in service is typical although a rapid change is of concern. Usually means fluid thermal stressing from hot spots or the compression of air bubbles. Normally a 2-3.
<b>Appearance</b>	No visible oil (on top), water (on top), particles, fibres or cloudiness. Action: Anything different seen.
<b>Viscosity</b>	Fluid is an ISO VG 46. Viscosity should not normally vary if the make-up is the same viscosity. A change may be the result of contamination, testing or degradation. Action: Change of 10%.
<b>Acidity/TAN/ Neutralization No.</b>	As fluid is used, acidic compounds can be formed. Normally kept low at <0.1 mg KOH/g by purification media such as fuller's earth or Selexsorb. Too high at any time can lead to later problems and shortened fluid life.
<b>Water Content</b>	Esters can hydrolyse so the water content has to be controlled. Excessive water can also reduce the effectiveness of most purification media. Not normally a problem if less than the OEM limits of 1000 ppm or so.
<b>Particle Count</b>	Too high can lead to shorter fluid lives, servo and or solenoid valve problems with sticking and screen/filter blockage. Resample and determine source if still high. Proper sample procedures are essential. Do not accept erratic results.
<b>Mineral Oil Content</b>	Even a little can impair fire resistance, soften EPR or butyl seals and/or shorten fluid life.
<b>Resistivity</b>	Must be kept high to prevent electro-kinetic wear of servo-valve spools. Normally controlled by the purification media except for activated alumina and some IX resins. Action: <10Gohm.cm.
<b>Trace Metals</b>	High amounts of Mg, Ca or Na may be from the purification media. Can lead to the formation of soaps and/or gels and have a negative effect on foaming and/or air release values.