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'Providing Tribological Solutions'

TECHNICAL NOTE MIXING EHC FLUIDS

Lanxess Reolube Turbofluids: The Turbofluid® EHC products are all based on triaryl phosphate esters and these control fluids can be mixed if required. They can also be mixed with similar fluids from other suppliers. The properties of the resulting mixtures will depend on which types of triaryl phosphate fluids were mixed and in what amounts. Some, such as the 100% 'natural' fluid Turbofluid® 46XC have the best air release times and highest electrical resistivity while the 100% 'synthetic' Turbofluid® 46B should have the best oxidation resistance. Mixing will change some parameters but it should be noted that all lines have all been used successfully in different types of turbines. Consequently, while there might be unique site requirements in some cases, any of the fluids or their mixtures can usually be used in most turbines.

Other Fluids: An example of how mixing has been accepted is that the leading fluid in the US being provided by the other supplier is a mixture of 'natural' and 'synthetic' triaryl phosphate esters. This was introduced unannounced about 1990 but the name was not changed.

With lube oils one problem that can arise is compatibility problems with additives, however with the Turbofluids the additive content is very low and the supplier of the other fluid states that their products do not have additives. Consequently, additive interaction cannot be an issue.

Turbine Supplier Approvals: Mixing triaryl phosphate ester is allowed by both GE and Siemens Westinghouse as well as other turbine suppliers provided that the fluids being mixed are approved. Written documentation is available.

Experience: Many stations have used one of the Turbofluids and as an example a LCRA station in Texas started adding Turbofluid® 46B to Fyrquel® EHC about thirty years ago. While the fluid is now mainly Turbofluid® 46B there were no problems attributed to mixing. The station got other benefits because the technical support was able to address several non-fluid issues.

When using a Turbofluid as top-up on a fluid from a different supplier you can expect some or all of the following; better pricing, the advantages of the Turbofluids and/or better technical support. It can also be advantageous in some cases to make-up with 46XC, the 100% 'natural' fluid to improve air release times and/or the resistivity. Because the characteristics of in-service fluid can be variable, it is often warranted to test different ratios of the used and new fluid. If the fluid is in very poor condition, then some fluid remediation might be required to get the full benefit.

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