

P19**THE THERMODYNAMICS OF SOLUTIONS OF
POLYPERFLUOROPROPYLENE OXIDE IN PERFLUORINATED AND
OTHER SOLVENTS**

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Apart from its intrinsically valuable physical properties in industrial applications polyperfluoropropylene oxide (PPFPO), usually marketed as Fomblin Fluids of varying grades, is a valuable model substance for the study of the solution behaviour of a perfluorinated polymer. This is particularly so given the characteristic insolubility in any solvent of polyperfluoroethylene, the only other perfluorinated polymer.

We report here the solution properties of PPFPO in a variety of solvents ranging from hexafluoroethane to tri-nonafluorobutylamine. The properties studied are the excess volumes of mixing and the orthobaric lower critical loci as a function of temperature, pressure, composition, and polymer and solvent chain lengths.

The phase behaviour is discussed in terms of the Prigogine corresponding states theory. A requirement of the application of this theory is a knowledge of the degree of conformity of the solvents to a principle of corresponding states. Both the results needed to carry out this test and the outcome of the analysis are reported.