

Usage of R245fa in a More Electrical Aircraft

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Abstract - The increasing use of electric systems in commercial aircraft requires new cooling systems with higher cooling capacities. The fluids used in these systems have to meet environmental and safety requirements. R245fa is investigated as coolant to substitute commonly used fluids. The low system pressure and high critical temperature are the main advantages. The power electronics which will be integrated into the More Electrical Aircraft can only be sufficiently cooled using liquid or two-phase fluids. For this reason R245fa is investigated in detail as a two-phase coolant. During the presentation different system architectures using R245fa will be analysed and assessed using the modeling language Modelica.