

Title (en)

Method for replacing PCB-containing coolants in electrical induction apparatus with substantially PCB-free dielectric coolants.

Title (de)

Verfahren zum Ersetzen von Polychlorbiphenyl (PCB) enthaltenden K hlfl ssigkeiten in elektrischen Induktionsapparaten durch PCB-freie dielektrische K hlfl ssigkeiten.

Title (fr)

Proc d  pour remplacer, dans les appareils d'induction  lectrique, les r frig rants contenant du polychlorobiph nyl (PCB) par des r frig rants di lectriques totalement exempts de PCB.

Publication

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Application

EP 84116402 A 19841227

Priority

- US 56630683 A 19831228
- US 67527884 A 19841127

Abstract (en)

Method for replacing a coolant containing PCB in electrical induction having a tank containing the PCB-containing coolant and an electrical winding and porous solid cellulosic electrical insulation immersed in the PCB-containing coolant with a substantially PCB-free permanent coolant to convert said electrical apparatus into one in which the rate of elution of PCB into the PCB-free coolant is below the maximum allowable rate of elution into the coolant of an electrical apparatus rated as non-PCB, the porous electrical insulation being impregnated with said PCB-containing coolant. The method comprises the steps of: (a) draining the PCB-containing coolant from said tank to remove a major portion of the PCB-containing coolant contained by it; (b) filling the tank with an interim dielectric cooling liquid that is (i) miscible with PCB, (ii) sufficiently low in viscosity to circulate within said tank and penetrate the interstices of the porous solid electrical insulation, and (iii) capable of being readily separated from said PCB; (c) electrically operating the electrical induction apparatus for a period sufficient to elute PCB contained in the PCB-containing coolant impregnated in the porous insulation therefrom into the interim dielectric cooling liquid; (d) thereafter draining the interim dielectric cooling liquid containing the eluted PCB from the tank; (e) repeating the cycle of steps (b), (c) and (d), when the rate of elution of PCB into the interim dielectric cooling liquid exceeds 0.55 ppm of PCB per day based on the weight of the permanent dielectric coolant, a sufficient number of times until the rate of elution of PCB into the interim dielectric cooling liquid does not exceed the rate of 50 ppm PCB based on the weight of the permanent coolant after 90 days of electrical operation; and (f) filling the tank with a substantially PCB-free permanent coolant selected from the group consisting of high boiling, high viscosity, silicone oils, synthetic ester fluids, poly-alpha-olefin oils and hydrocarbon oils.

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IPC 8 full level

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US4790337A; FR2705140A1; GB2235096A; GB2235096B; DE3540291A1; FR2591383A1; FR2680910A1; US4879004A; US5082535A; WO9427100A1

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