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CAPACITOR ASKARELS & THE ENVIRONMENT

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INTRODUCTION

Polychlorinated biphenyls (PCBs) have enjoyed an enviable reputation as impregnation liquids for power frequency capacitors for several decades. The combination of thermal and chemical stability, coupled with excellent dielectric properties and a very high degree of fire resistance, has resulted in extensive use of these Askarels for impregnating paper and mixed dielectric capacitors in the medium and high voltage range.

In recent years, however, concern has been expressed about the effects of PCBs on the environment. The functional properties of these chemicals, which range from colourless mobile liquids to wax-like solids, were ideal for numerous other applications in heat transfer systems, hydraulic systems, adhesives and resins formulations and in carbonless reproducing papers. The expanding use of these substances in such a variety of applications may have caused their widespread distribution in the natural environment, although recent work suggests certain isomers may be formed naturally, for example, in certain waste treatment facilities. The physical and chemical properties appear to be such that certain forms of PCBs are preferentially extracted from the aquatic and marine environments by living

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organisms and either directly, or though some food chain mechanism, accumulated in higher animals such as fish and birds, and have attained levels which are significant in certain fish and in some species of fish-eating birds. This subject has been reviewed very extensively (1), (2), (3).

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