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## PERSPECTIVES ON ALTERNATIVES TO PHTHALATE PLASTICIZED POLY(VINYL CHLORIDE) IN MEDICAL DEVICES APPLICATIONS

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### Abstract

Poly(vinyl chloride) (PVC) is one of the most important polymeric materials available today and is used to manufacture many items, ranging from packaging and toys to healthcare devices. PVC is *per se* a rigid material but it is made softer by compounding with plasticizers, particularly phthalate esters such as di-(2-ethylhexyl) phthalate (DEHP). In flexible plasticizer PVC (P-PVC), phthalates are not chemically bound to PVC and they are released into the external environment. In particular, prolonged contact of P-PVC based medical devices with body fluids or tissues has been shown to be associated with severe health risks. Major concerns regarding the safety of P-PVC in medical plastic items have been raised, and several alternatives to phthalates and to P-PVC itself as well as chemical/physical treatments of P-PVC to reduce DEHP migration have been proposed.

This review outlines recent scientific approaches for preventing DEHP contamination of humans by P-PVC medical devices, highlighting the impact of the proposed alternative materials on human health and strategies for implementing them.

**Keywords:** Poly(vinyl chloride), Phthalates, Plasticizers, Medical Devices

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