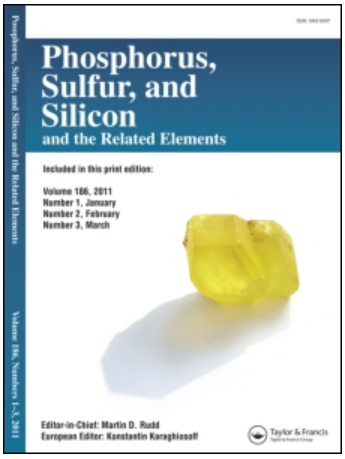

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Oxygen Gas Permeability of Poly(Aminophosphazene) Films in Water

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Various gas permeability in dry and oxygen gas permeability in wet conditions with poly(organophosphazene) membranes have been previously reported[1-2]. To prepare the transparent poly(aminophosphazene) having the highest oxygen gas permeability value (D_k) in water, chlorine atoms in polydichlorophosphazene (1) were substituted with amine compounds (2).

$$(NPCl_2)_n\ (1) + R^1NH_2 + R^2NH_2 + R^3NH\ (2)$$

The purified and casted polymers had the transparent film, they will be used as contact lens materials. Also, the polymer were cured with cross-linking agent such as neopentyl glycidyl diether (NPG) or trimethylol propane triglycidyl diethylether (TMP) to increase D_k value. D_k of the original polymer [Poly(Di-n-hexylamino)(n-butylamino)(n-butylamino)phosphazene] was higher than those of polymer cured with NPG. On the other hand, D_k of the polymer cured with NPG and TMP was higher than those of the original polymer [Poly(Di-n-hexylamino)(n-butylamino)(n-hexylamino)phosphazene] and [Poly(Di-n-hexylamino)(n-propylamino)(n-hexylamino)phosphazene.

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