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DIAMIDOPHOSTES AS PRECURSOR FOR PHOSPHONITRIDE GLASSES

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Phosphate glasses are of potential interest because of their low melting points and high thermal expansion coefficient. The chemical durability of these glasses can be improved considerably by substitution of some oxygen ions by nitrogen. This substitution improves the mechanical properties and chemical durability. The substitution of oxygen may be obtained by doping the melt with nitrides or remelting the glass in ammonia [1].

We presently are developing new ways to obtain nitrophosphates glasses by thermic decomposition of diamido-orthophosphates.

The diamido- orthophosphate acid presents two forms at low temperature; one of these forms may be described by a zwitter- ion such as the sulfamic acid. With aging or by heating up to 90°C we obtain a polymeric form. We present our results obtained by spectroscopic means.

By heating at 900°C we lost the quasi totality of the nitrogen. But with salts of diamido- orthophosphate with have still about 10% of nitrogen at 900°C. We discuss the mechanism of formation of the polymeric form obtain by heating these salts.

[1] M. R. Reidmeyer, M. Rajaram, D.E. Day, *Journal of non crystalline Solid* **85** 186 (1986)