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Thermal Treatment of a Multicomponent System

Metaphosphatecoacervate-TiO₂

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THERMAL TREATMENT OF A MULTICOMPONENT SYSTEM METAPHOSPHATE COACERVATE-TiO₂

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In view of developing heat resistant protective coatings, we study presently metaphosphate polymeric chains in two colloidal forms (gel and coacervate). The two main advantages are:

- easier coating process
- formulation homogeneity (at room temperature) of this inorganic " paint "

In this field, we study multicomponent systems containing oxides (ZrO₂, TiO₂, NiO...) and multivalent metal coacervates (Ca/Na, Ca/Mg, Mn/Na ...). The various steps during the heating treatment (range 25 - 1000°C) are illustrated for the TiO₂ coning system. Different P2O₅/ TiO₂ ratios are selected. The influence of TiO₂ addition is determined during the synthesis of condensed phosphates. Parallel reactions occur depending on the cation associated with the starting coacervate