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(AC&CA-05)

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**DETERMINATION OF SOME PHYSIOLOGICAL ACTIVE
COMPONENTS IN PHARMACEUTICAL PRODUCTS
BASED ON BISHOFITE**

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Bischofite contains near 65 elements of the Periodical Table, including magnesium, phosphorus, potassium, sodium, manganese, iron, calcium, copper, zinc, iodine, etc. The presence of physiological active macro- and microcomponents in bischofite causes its wide usage in medicine. It is necessary to notice, that during the conservation of technical bischofite rusty precipitate is formed, and that may lead to the removal of considerable part of microelements. Without those microelements the biological features and efficiency of brine is reduced. Therefore it is necessary to have the technologies of analytical supply of the control of biological impotent components in pharmaceutical products based on bischofite.

The main idea of research is application of accessible, simple and express methods that don't need expensive reagent techniques for analysis of pharmaceutical products based on bischofite. The determination of metal ions such as Mg, Zn, Cu, Fe by complex-formation titrations using a widely applicable chelating agent, EDTA, have been studied as a function of pH, complexing agents and indicators. The analysis consists of four parts:

- 1) Fe (III) is determined by direct titration with EDTA at pH 3 using sulfa salicylic acid as indicator;
- 2) total Mg, Cu and Zn is determined by direct titration with EDTA at pH 10 using eriochrome black T indicator after iron elimination with tartrate ions;
- 3) total Cu and Zn is determined by direct titration with EDTA at pH 5 using murexide indicator after iron elimination with acetate ions;
- 4) Zn is determined by direct titration with EDTA with xelenol indicator after iron elimination with acetate ions and copper – with sulfide ions.

This procedure was tested in the analysis of pharmaceutical products "Poltava's bischofite" (series "Elite" and "Profi") and a brine of bischofite with rusty precipitate. The data bear out the sufficient accuracy and reproducibility of the proposed procedure which allows to perform the determination magnesium, iron, copper and zinc ions at concentrations above 10^{-3} M. It was found that the content of Mg ion in the studied brine decreases in comparison with "Poltava's bischofite". The Fe, Cu and Zn ions were not detected in the brine.