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WATER HARDNESS ELIMINATION BY FLOTATION METHOD USING POTASSIUM SALTS OF FATTY ACIDS

Water is one of the most widely used solvents of medicaments in the pharmaceutical industry. Any pharmaceutical company or pharmacy cannot deal without the use of water. Water must ensure the safety of manufactured drugs. In this regard, the water quality is subjected to special requirements, which are governed by regulations of the State Pharmacopoeia of Ukraine, add.1.

It is known that to reduce the content of ions of different salts containing, for example, in wastewaters of various industrial facilities, a flotation method is used. This method is also commonly used for the enrichment of various ores.

The essence of the flotation method is that air is blown through the fluid, and particles of flotation reagent (collecting agent) adhere to the bubbles as a result of reaction with a particular ion in the fluid, which is then carried to the surface of wa-

ter. This reaction is caused by differences in wettability of the particles of the surface by water. Particles can be removed from the surface of the fluid physically.

Analysis of results shows that the ejection of magnesium cations from the tested fluids by flotation method with increasing temperature first increases and then decreases. However, such relationship does not exist when ejecting the calcium cations. At all temperatures, flotation can eject only that part of magnesium and calcium ions which during introduction of the collecting agent into fluid becomes a part of the dispersed phase of colloidal solution formed. Thus, at 20 °C using flotation reagent potassium tridecane it is possible to eject from a solution up to 90% of magnesium cations and up to 30% calcium cations, but the latter at higher temperatures. Application of this method can significantly reduce the hardness of water.