

## Efficiency of titanium salts as alternative coagulants in water and wastewater treatment: short review

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### ABSTRACT

Coagulation is a fundamental process of water treatment. Its main purpose is to remove colour and turbidity from water and it plays a role in ensuring the safety of the water supply systems. It can also be an intermediate stage of industrial wastewater treatment and is usually used before applying more complex treatment methods. The protection of water resources, which will re-enter the water cycle, is of vital importance. Research conducted in recent years indicates the possibility of using coagulants containing  $Ti^{4+}$  compounds as an alternative to traditional coagulants. In addition, the use of titanium coagulants provides the opportunity to recycle reagents, as it is possible to recover titanium from the resultant sludge. A review of available literature data on the use of titanium salts in the coagulation process was carried out in the paper. The work covers both issues of water and industrial wastewater treatment. The results of tests conducted using various parameters of the coagulation process were considered. The research on the coagulation of synthetic water and river water as well as synthetic sewage and sewage from various industrial processes was collated and analyzed.

*Keywords:* Coagulation; Titanium coagulants; Water treatment; Wastewater treatment; Titanium tetrachloride; Flocculation

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