

Enterprises Treat Wastewater With New Types of Coagulants

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Abstract:

This article studies the possibilities of using new types of coagulants in the treatment of industrial wastewater. Polyaluminum chloride, iron sulfate and organic coagulants efficiency compared. Results this showed that organic coagulants the most high efficiency manifestation ecological It is also a convenient option. Service to do This is possible. research industry sewage waters cleaning according to innovative approaches to develop service does.

Key words: aqova waters, coagulation, organic coagulant, ecological security, industry waste.

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Water the waters cleaning environment protection and ecological stability of providing important from directions is one. Modern industry enterprises working release in the process various chemical mixtures own inside received sewage the waters harvest This will do. pollution sources natural water to resources negative impact to show possible. Traditional cleaning methods are always effective not to be because of, new kind of from coagulants use current to the point is spinning[1,2]. This in research new kind of coagulants using enterprises sewage waters effective cleaning opportunities studied[3].

Methods

In the study various industry from enterprises taken sewage water to the samples new kind of coagulants was used. Experience following in stages take went:

1. **Water samples prepared** – samples in the content hard substances, oils, heavy metals and organic pollutant substances amount determined, initial content record was done.
2. **Coagulation process**—each coagulant various in concentrations (10-100 mg/L) water to the samples applied. Optimal dose determination for various in concentrations experiments was held.

3. **Mixing process** – initial fast mixing (150 rpm, 2 minutes during) and slowly mixing (40 rpm, 15 minutes during) increased.
4. **Drowning and filtration**–yield was floccules separated and water transparency level and pollutant of substances decrease level measured.
5. **Analysis results evaluated** – physicochemical analyses (pH, turbidity, TOC - total organic carbon, solid residue amount) using efficiency was evaluated.
6. **Repeated experiences**– each experiment three times repeated, results statistic in terms of analysis was done.

Results

Below **sewage the waters in cleaning new coagulant and traditional coagulants** (e.g. aluminum) sulfate) **COD (Chemical oxygen requirement)** and **TSS (General) suspended substances**) decrease efficiency according to experience results tables in the form of presented Each to the table comments added are , they are the results to understand help gives .

Table 1. New coagulant various in doses efficiency

Coagulant concentration (g/l)	COD reduction (%)	TSS reduction (%)	General efficiency (%)	Notes
0.1	30	40	35	Less in concentration efficiency low .
0.3	50	60	55	Concentration when increased efficiency increases .
0.5	60	70	65	Optimal concentration (0.5 g/l).
0.7	64	73	68	Efficiency a little increases .
1.0	65	74	69	High in concentration efficiency almost does not change .

New coagulant at a dose of 0.5 g/l the most high efficiency shows . From this high in concentrations efficiency almost does not change.

Table 2. New coagulant under different pH conditions efficiency

pH value	COD reduction (%)	TSS reduction (%)	General efficiency (%)	Notes
5	50	60	55	Acidic in the environment efficiency middle
6	55	65	60	Efficiency a little increases.
7	60	70	65	Optimal pH (7).
8	58	68	63	Efficiency a little decreases.
9	55	65	60	Alkaline in the environment efficiency middle

New coagulant At pH = 7 the most high efficiency shows (65%) . Other pH under the circumstances efficiency a little decreases.

From the table apparently It is clear that the New kind of organic coagulant coagulants the most high efficiency demonstration reached, especially **COD (Chemical oxygen requirement)** and **TSS (General) suspended substances**) reduce Also , pH at the level big change not observed , this and organic coagulants to the environment the impact softer that shows.

Discussion

Research results new kind of coagulants industry sewage waters in cleaning traditional to methods than more efficient that showed . Especially bio- coagulants ecological security and pH balance sheet stability provide according to to advantage has . Ferrous sulfate and efficiency high Although the pH level noticeable change It is also possible to use polyaluminum chloride is also good results showed , but organic coagulants with in comparison ecological in terms of a little to the shortcomings has .

Conclusion

Research results this showed that the industry sewage waters in cleaning new kind of from coagulants use efficiency Especially , bio - coagulants high cleaning ability and to the environment less impact them preferably method as showing . In the future this coagulants wide on a scale application ecological the environment to improve service to do possible.

Used literature

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