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Effective Method of Industrial Waste Treatment

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Abstract

According to our study, the use of special coagulant, flogulyant, extragent, and the use of conditions can result in the efficient disposal of oil spills from the oil spill mixture. In addition to thoroughly cleaning oil spills, up to 100 percent of dependent substances have been cleaned and black rice has been fully dissolve. In the study, from 1ml petroley effects (from 40 to 70 degrees Fahrenheit [40 to 70°C] in gasoline fractions), from $Al_2 (SO_4)_3$, The optimal use of 2 ml 5% H_2SO_4 acid as a flogulyant, 1ml 5% $NaHCO_3$ solution to have pH=7-7.5 when required. This chemical method is based on the scientific basis for the possibility of cleaning up NMTG-based industrial wastewater at a maximum of 25-30 degrees Celsus in the industry.

Keywords: wastewater, industry, coagulant, ecological, effective, flogulyant, chemical, petroleum products, waste mixture

Introduction

In the oil industry, technological advances are complex and complex, so they are shaped by a stream of water that differs from one another. Because the industrial wastewater that occurs during this time is not separately cleaned, it is mixed with the facility's general sewage system and enters the refinery's refinery. In those refineries, industrial wastewater is first cleaned up in mechanical and biological cleaning stages, as well as in ecological standards. During these processes, some of the clean water is used in the recycling water system at oil refineries, while part of it is flowing into reservoirs. That is why the oil refinery industry is considered one of the sources of hydrosphere pollution.

Currently, despite the use of new technological processes, installations, and the results of many research projects in the developed world, the wastewater industry has not been fully cleaned of wastewater.

Based on the results of a long-term study carried out by our mission, it is noteworthy that the number of wastewaters that is the most complex component of the oil spill is specifically the use of optimal conditions, coagulants, flogulyants. Using chemical technology for the use of extragents, up to 100 percent of NMTQ-dependent substances can be used to ensure that the wastewater is not fully transparent.

This newly used method (Rakida, 2020; Burenin, 2015; Tulemann and Sherbel, 2011; Xutoryanski, 2011; Shapkin et al., 2012; Shamilov et al., 2020; Hajiyeva et al., 2021; Bayramov et al., 2019) has been compared to the methods used in publications (Rakida, 2020; Burenin, 2015; Tulemann and Sherbel, 2011; Xutoryanski, 2011; Shapkin et al., 2012) and has been compared to the methods used in some institutions by mechanical thermal, physical, and chemical methods (extraction, evap) based on several new scientific research of oil-producing industrial waters although oration, azeotropic, ionization, adsorption, absorption, coagulation) and finally biological cleaning methods have been used in the final phase, up to 100 percent of those industrial flows have not been able to be cleaned of NMTQs and dependent substances.

Materials and methods

For a long time, various substances such as $FeCl_3$, $FeSO_4$, $Fe_2(SO_4)_3$, $Al_2(SO_4)_3$ have been used to clean up the oil industry's wastewater samples in a number of ways. At the same time, a new optimal technological regime has been developed using a fraction of 40 to 70 degrees Fahrenheit [40 to 70°C] of petroleum $_2SO_4$ acidic acid, as well as an extragent.

The highest score at the time of the study was obtained when using 5 percent of $Al_2(SO_4)_3$ as a coagulant. Therefore, we provide the following explanation for the experimental part of the method used. A liter of TS samples from NMTQ at a rate of 1,000mg/l are placed at a separator of 5-20°C and are mixed with a petroleum effect of up to 0.1 percent (1ml) for a minute. Up to 0.5 percent of the TS sample is mixed for 1 minute with a 5 percent $Al_2(SO_4)_3$ and 2 ml 5% H_2SO_4 acid is added to accelerate the coagulation process. The maximum process of coagulation is completed in 15-20 minutes. In the separator lock, the upper part of the three phases (NMTQ+extra) was separated by a small amount of mechanical mixtures, including water and salts. The separation of water layers, water layers, and debris (Shapkin et al., 2012) is completed by known methods. The amount of a separated phase has been refined in a gravitational way.

The study found that the TS sample, which was refined, was about zero in the amount of NMTG and dependent matter. Thus, using chemical reactors-coagulant, flogulyant, and extraterrestrogen - a special optimal technological regime has been used to clean up NMTQ, 100 percent of the dependent substances, and full transparency of the color.

The method mentioned in the bible uses up to 10 percent of the water that is extracted from the NMTG because of the $_3$ and salt mixture of SO_4 ions. At the same time, it has been made clear that up to 3 percent of the TS, which is collected in the cleaning process instead of extragents, can be used to clean up to 100 percent of the NMTQ, dependent substances, and fully discontinue the color.

Result and discussion

The problem of deep cleanup of wastewater, which contains high NMTQ emissions, is still ongoing because of frequent changes in the oil industry, its very complex physical characteristics, and its high flow speed.

Experimental research and scientific, technological, and technological research have found that the use of extragent, coagulant, and flogular wastewater from economic and ecological activities can also be used to clean up 100 percent of NMTQs, dependent substances, and fully transparent. As the data show, this method is now considered scientifically valid because it has a very important ecologically and economically important technology.

When using various percentages, density, and specialized coagulants in various directions, it has been proven that the highest coagulating chemical reaction is $Al_2(SO_4)_3$ substance. During this time, the use of petroleum reactors, such as H_2SO_4 acid, and extragents, has been identified as a floguliant and the use of optimal and technological regimes.

The following scientific explanations can be used in publications to describe the progress of the coagulation process (Novruzov, 1991; Patent, 2021) in the chemical ecological efficiency of wastewater samples that have been developed in the oil industry.

The environment of wastewater is shaped by neS, often changing pH=9-10, and in some cases even pH=10-11. That is why when using $Al_2(SO_4)_3$ as a coagulant during the cleaning of TS_4 5 percent H_2SO is added to the TS that is cleaned as a flogulyant and neutralizing TS.

Previously, up to 0.1 percent of the TS sample is mixed with petrole effects. During the extraction process, the combination of i-C_5H_{12}, n-C_5H_{12}, and i-C_6H_{14}, n-C_6H_{14} is extracted from the main NMTG and other organic compounds contained in the TS.

The mixture of NMTG emissions and the full extraction of NMTG occurs when the mixture is mixed with a mixture of up to 0.5 percent of that water and a 5 percent $Al_2 (SO_4)_3$. Meanwhile, $al_2 (SO_4)_3$ hydrogen peroxide and becomes colloidal dispersion $_3$ Al(OH) (Novruzov, 1991):

$$Al_2(SO_4)_3 + 6H_2O = 2Al(OH)_3 + 3H_2SO_4$$

The SO_4^{-2} aniones of sulfuric acid, such as sulfuric acid, and (Shapkin et al., 2012) sulfuric acid, are reacted to by NaOH, $Ca(HCO_3)_2$, and so on.

$Al_2 (SO_4)_3$ coagulant is hydrogenated as soon as it is added to the TS mixture, and when it is transformed into a colloidal shape $Al(OH)_3$ the TS environment is likely to be loaded because it is pH=9-11, and the loaded colloids contained in that water are likely to be adsorbed and coagulated. Meanwhile, when Al(OH) $_3$ collapses at its own expense, the TS mechanically crushes clay, soil, and other particles that are dependent on the environment and accumulates them in an organic layer, which has a positive effect on the complete extraction process.

The aforementioned explanations show that regardless of the amount of NMTG in manufacturing and the volume of TS, it is possible to clean up 100 percent of that water.

Finally, it should be noted that the NES's disposal of wastewater that is shaped by the production process will prevent TS from being released into a million cubic feet [1 million cubic meters] of water in those institutions, and drinking water can be saved at that rate, which is very important in ecological value.

References

Bayramov G.I., Samadova A.A., Jafarova N.M. (2019). Methods of analysis of harmful substances in industrial wastewater obtained in the oil industry // Laman Publishing Polygraphy. MMC. 22

Burenin V.V. (2015). Protection of water bodies from pollution by oily wastewater. // Ecology of production. Scientific and technical journal. M. 2: 54–62

Hajiyeva S.R., Bayramov G.I., N.T.Shamilov, Rakida N.M. (2021). Ecologic effektive treatment of industrial waste water formed in the oil – producing industry by coagulation method // Azerbaijan chemical journal. 63-67.

Novruzov S.A. (1991). General chemical tecnology and industry ecology ekologiyası. Baku: Maarif, 340–345

Patent. (2021) "Method of treatment of industrial wastewater", 7: 5

Rakida N. (2020). Development of the method of deep ecological effective chemical treatment of industrial wastewater generated in the oil industry. // International Journal of Scientific Engineering Research, 11: 6: 880–886

Shamilov N.T., Hajiyeva S.R., Bayramov G.I., Kadirova E.M. (2020). Problems of toxic organic substances for aquatic systems // "Materials of the VIII International Scientific Conference "Chemistry of Coordinating Compounds" dedicated to the 85th anniversary of the Department of "Analytical Chemistry" Baku- BSU, 22-23 december 3 (113-115)

Shapkin N.P. and oth. (2012). Wastewater treatment method. Patent 2440931, Russia. MPK CO 2F 1/465. Chapter. 3.

Tulemann I., Sherbel V.S. (2011). Wastewater treatment at refineries // Ecology of production. Scientific and technical journal, 4:28–30.

Xutoryanskiy F.M. (2011). Trapped water-oil emulsions: removal of mechanical impurities and dehydration. // Journal. The world of petroleum products. Chapter. Ecology and industrial safety. 4:25–28