ISSN 2181-8622

Manufacturing technology problems

Scientific and Technical Journal Namangan Institute of Engineering and Technology

INDEX COPERNICUS INTERNATIONAL

Google Scholar Crossref doi SLIB.UZ Scientific library of Uzbekistan

Volume 9
Issue 1
2024

PRODUCTION WASTEWATER TREATMENT TECHNOLOGIES (On the example of Ultramarine pigment production enterprise)

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Abstract: Sofitel Joint Venture at the joint venture for the production of Ultramarine pigment, samples were taken from wastewater contaminated with various substances used in the production process and the composition was studied.

As a result of the research and research on the technology of wastewater treatment generated by industrial enterprise production processes, the ingridients in the wastewater content generated by the permitted norm were Na+ 1.97 times in the last 6th Pool, Mg2+ 1.025 times, HCO3 3.36 times, Cl-9.22 times, NO2 - 2.5 times.

The effluent generated from the production process is trapped in a filter in a pool for a certain amount during Tinning in six pools, accumulating ultramarine pigment at the bottom of the pool. Ultramarine dispers particles in the pool become larger and sink to the bottom of the effluent as a result of their mutual addition and formation of assosiates. As we know, ultramarine pigment can be used not only for varnishes, but also as a dye in the production of textiles, paper, plastic.

Keywords: effluent, technology, ingridient, industrial enterprise, reagent, method, efficiency, ultramarine pigment.

Introduction. The study of wastewater treatment works generated from industrial production, conducting scientific research are among the most pressing problems of the present day.

Research work on improving the wastewater treatment process in painting and finishing Enterprises (M.Amonova). In the research work carried out, the study of the physical and chemical properties of primary reagents, methods of performing experiments, the composition of wastewater up to and after treatment is described by chemical and physico-chemical methods. With IK-spectroscopy, thermal analysis and other analytical methods, aluminum sulfate, sodium hydrosulfite have been found to have the sorbtion, coagulation and flocculation properties of mixed ingredients and their kimviyvi and thermal stability, as well as being shown to have high efficiency compared to reagents used in industrial wastewater treatment [1].

Research work on the topic of improving wastewater treatment technologies through the use of flocculants (L.I.Gandurina).

One way to intensify existing wastewater treatment technologies is to use organic flocculants. Despite the fact that organic flocculants have been used in turbid water purification processes for a long time, the scope of their application has important technological advantages over inorganic coagulants. The widespread use of organic flocculants makes it possible to drastically reduce the consumption of inorganic

coagulants, increase the efficiency of cleaning facilities, increase the reliability and stability of their operation at low temperatures and at the highest loads, reduce [2].

The surface wastewater treatment technology development study (Ulasoves E.A.) hosted by. The effluent treatment used the reagent" Ecozol-401 " and the flocculant VPK-402. The action of VPK-402 affects the increase in the rate of coagulation and suspension, under the action of the reagent" Ecozol-401", the purification of solid-phase effluents is accelerated [3].

The study of improving cellulose fiber waste processing technologies (a.A.Abdumajidov). In the processing of cellulose fiber waste, the chemical, in accordance with the chromophore system of the dye of the enameled cloth cuffs, and the rational composition of decolorization-whitening of printing and pigment dyes from fiber material in enzymatic-flotation methods were determined by mathematical modeling of the process. The technology of dye extraction through enzymatic-flotation processing methods has been created from the surface of 100% cotton fiber fabric waste printed on a flower with pigment dye. On the basis of recycled cellulose fiber waste, in the process of flower printing, paint composition, writing, drawing and notebook paper comps were developed and discolored-an effective resurfacing technology for repainting bleached fiber materials was developed [5].

From the analysis of the literature, it turned out that in the studies carried out, the methods of purification of wastewater generated from ultramarine pigment production cexes were not widely covered.

The purpose of the research work is to implement the improvement of the technologies of wastewater generated in the production of Ultramarine pigment, which is widely used in the industry.

Materials and methods. The amount and composition of wastewater depends on the type of production. It can be contaminated with various substances: biologically unstable organic compounds, low-toxic inorganic salts, petroleum products, biogenic compounds, specific toxic substances, including heavy metals, non-decomposing organic cytic compounds.

Wastewater includes dissolved inorganic and organic compounds, suspended coarse disperses and colloidal mixtures, sometimes dissolved gases such as hydrogen sulfide, carbon dioxide, etc. The water used in the complete transition of the technological cycle to obtain the finished product is contaminated with the starting , intermediate and end products. For example, effluents in enterprises for the production of mineral fertilizers and inorganic substances, with acids, alkalis, various salts, enterprises producing basic organic synthesis, are contaminated with effluents - fatty acids, aromatic compounds, alcohols, aldehydes and other waste.

Mechanical, flotation, coagulation, adsorption methods were used in wastewater treatment.

Object of study. The study and research work on the technology of wastewater treatment generated from production was carried out by the limited liability company Sofitel, which produces ultramarine pigment.

Sofitel Joint Venture Limited Company ultramarine pigment production plant Jizzakh is located in the City Free Economic Zone.

Sofitel Joint Venture Limited Company ultramarine pigment production plant includes the following Tsex and departments:

1) processing tsexi; 2) product warehouse; 3) grinding Department; 4) cooking department; 5) boiler; 6) jug tsexi; 7) Administration.

The project capacity of the Ultramarine pigment production plant LLC Sofitel joint venture is 11 t/Sut., 330 T/month, 4000 t/Year. The product produced is export and konkurentbop in the domestic and foreign market. The product is exported through China to the countries of Egypt, Turkey. Sofitel Joint Venture Limited Company ultramarine pigment production plant location map shown in Figure 1.

Figure 1. Sofitel Joint Venture Limited Liability Company ultramarine pigment production plant.

Results and their discussion. As a result of the research work of the limited liability company Sofitel to clean the wastewater generated from production at the Ultramarine pigment production plant, it became known that:

Water-containing substances used to obtain raw materials in production are Na+ 36 mg/l (0.3 pn), Ca^{2+} 12 mg/l (0.067 pn), Mg^{2+} 7 mg/l (0.175 pn), Fe^{3+}<0.05 (0.1 pn), HCO_3-73 mg/l (0.61 pn), SO_4^{2-} 54 mg/l (0.54 pn), Cl - 13.0 mg/l (0.1 rem 0.043 pn), No3 - 34 mg/l (0.075 pn), No2 - 0.20 mg/l (2.5 pn), AL^{3+} 0.05 mg/l (1.25 pn).

Wastewater content that comes into the pool after the raw materials are obtained-coming into the pool after the raw materials are obtained the wastewater content that falls into the pool is Na+ 664.7 mg/l (5.54 pn), Ca2+ 92 mg/l (0.51 pn), Mg2+ 39 mg/l (0.975 pn), Fe3+<0.05 (0.1 pn), HCO3 –390 mg/L (3.25 pn), SO_4^{2-} 5432 mg/l (1.55 pn), CL - 623.9 mg/l (2.08 pn), No3 - 78 mg/l (1.73 pn), NO_2 - 0.20 mg/l (2.5 pn).

The effluent content from the last Pool 6 is Na+ 236 mg/l (1.97 rem), Ca2+ 88 mg/l (0.49 rem), Mg2+ 41 mg/l (1,025 rem), Fe3+<0.05 (0.1 rem), HCO3-403 mg/l (3.36 rem), SO_4^{2}

- 1203 mg/L (0.34 pn), Cl - 2765/l (9.22 pn), NO_3 - 47 mg/l (1.04 pn), NO_2 - 0.20 mg/l (2.5 pn).

Conclusions. Samples of sewage contaminated with various substances were taken and the composition was studied, which was used in the production process at the joint enterprise of the production of Ultramarine pigment" Sofitel".

In wastewater treatment, the aqueous solution reagent "Ecozol-1", containing iron, aluminum and manganese ions, was prepared in the laboratory and used in practice in the treatment of wastewater generated in production.

As a result of the research and research on the technology of wastewater treatment generated by industrial enterprise production processes, the ingridients in the wastewater content generated by the permitted norm were Na+ 1.97 times in the last 6th Pool, Mg^{2+} 1.025 times, HCO_3 3.36 times, Cl-9.22 times, NO2 - 2.5 times.

The effluent generated from the production process is trapped in a filter in a pool for a certain amount during Tinning in six pools, accumulating ultramarine pigment at the bottom of the pool. Ultramarine dispers particles in the pool become larger and sink to the bottom of the effluent as a result of their mutual addition and formation of assosiates. As we know, ultramarine pigment can be used not only for varnishes, but also as a dye in the production of textiles, paper, plastic. The technology of the industry's introduction of Ultramarine pigment, which was collected as waste in the pool, into use as a dye in the production of textiles, paper and plastics, is under consideration.

During the business activity of the enterprise, pollution of the soil and groundwater from the effects of sewage is not expected.

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