

**Chemical fixing of moving sand of dried aral sea whith industrial waste**  
**Kuldasheva S.<sup>1</sup>, Eshmetov I.<sup>2</sup>, Agzamhodjaev A.<sup>3</sup>**  
**Химическое закрепление промышленными отходами подвижных песков**  
**осушенного дна Арала**  
**Кулдашева Ш. А.<sup>1</sup>, Эшметов И. Д.<sup>2</sup>, Агзамходжаев А. А.<sup>3</sup>**

<sup>1</sup>Кулдашева Шахноза Абдулазизовна / Kuldasheva Shahnoza Abdulazizovna – кандидат химических наук,  
член корреспондент МАНЭБ, старший научный сотрудник;

<sup>2</sup>Эшметов Иззат Дусимбатович / Eshmetov Izzat Dusimbatovich – доктор технических наук, ведущий научный  
сотрудник;

<sup>3</sup>Агзамходжаев Анварходжа Атаходжаевич / Agzamhodjaev Anvarhodge Atakhodzhaevich – доктор химических наук,  
профессор, академик МАНЭБ, заведующий лабораторией «Коллоидная химия»,  
Академия наук Республики Узбекистан (АН РУз),  
Институт общей и неорганической химии, г. Ташкент, Узбекистан

**Abstract:** results of researches on fixing of the salted sand of Aral sea by complex additives are given in work with the help sand binding МПК-1 and withdrawal of the Kungrad soda plant HSC and their composition with a woodust.

**Аннотация:** в статье приведены результаты исследований по закреплению засоленных песков Арала комплексными добавками отходов Кунградского содового завода ГСК и пескосвязующими полимерами МПК-1.

**Keywords:** fixing, МПК-1, HSC, sawdust, addition, addition, bearing out.

**Ключевые слова:** МПК-1, ГСК, опилка, добавка, корка, солевыйнос.

One of the largest in the modern history of global environmental catastrophes experienced by countries and 60 million people in Central Asia, the Aral Sea tragedy, which by its ecological and environmental, socio-economic and humanitarian consequences poses a direct threat to sustainable development in the region, health, genetic and the future of people living in it. Relocation of harmful salts from the dried bottom is a threat to the environmental situation in Central Asia, in the first place - the territory of Uzbekistan.

Chemical fixing of sands decides as modern environmental problems and developments in applied colloid chemistry, which studies, among others, the creation and control of sand structures, consolidate them and getting fixed sand surface with predetermined strength properties [1, p. 145].

As an additive-fixer used was МПК-1 soluble polymer solution HSC calcium silicate and sawdust. МПК-1 is a commercial polymer modified ship we obtained in terms of production by the hydrolysis of waste fiber «Nitron» 105-110<sup>0</sup>S temperature. The fixing solution HSC -  $\text{SiO}_2$ , used not as a finished product, but at the time of dilution solutions of sodium silicate and calcium chloride as an eye-catching product has a colloidal dispersion degree in the transition sol → gel [2, p. 58].

It can be seen that the content of the original WPA sand is low and amounts to - 6.28 %. Sprinkling sand surface aqueous polymer МПК-1 at a concentration of 0.1 and 0.3 % and mixed with sawdust significantly contributes to the strength and structure of WSA. In this case, the strength of the structure formed of sand and WSA fixed with 0.1 % polymer solution is 0,62-0,79 28,38-29,36 MPa and %, respectively, and for the 0.3 % polymer solution strength - 1,30-1,46 MPa - WSA 45,00-48,44 %, respectively. At a concentration of МПК-1 polymer composition of 0.5 % with sawdust structure strength could be increased to 2,16-2,59 MPa and WSA - 64,24-70,65 %, respectively, and the polymer concentration of 0, 7 % - the strength to 2,98-3,19 MPa and WSA - 64,24-70,65 %, respectively.

Fastening saline sands also carried out by treating the surface with a dilute aqueous solution (0.05 %) after introduction of HSC sand crushed and sieved through a sieve of 0.5 mm additives - sawdust in an amount of 0.26 kg / m<sup>2</sup> while thoroughly stirring the mixture. For this purpose, HSC solutions with concentrations in the range 0.2 to 1.1 %.

And also, the surface sand spraying an aqueous solution at a concentration of 0.2 HSC and 0.5 %, and mixtures thereof with additives - sawdust significantly contributes to the strength and structure of WSA. At the same time the strength of the structure created by the WPA and sand fixed 0.1 % solution of HSC is 0,72-0,80 MPa and 28,25-29,36 %, and for sand dune stabilization with 0.5 % polymer solution - 1, 28-1,39 and 44,57-48,41 % MPa respectively. When attaching the sand with an aqueous solution at a concentration of HSC 0.8 and 1.1 % and their compositions with sawdust strength emerged structure could be increased to 2,04-2,42 MPa for HSC concentration of 0.8 % and up to 2,92- 3.02 MPa to 1.1 % concentration HSC and their number 64,24-69,91 % WSA and 71,19-77,72 %, respectively.

Thus, under the influence of complex fixative (0.5 % polymer solution MPK-1 or 0.8 % solution of ethyl HSC sawdust) and salt resistant plants phytomelioration connection system increases, and the strength of the structure is enhanced, leading to satisfactory protection sand from deflation and to its consolidation.

#### ***References***

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