

*Materials of a Conference***RECYCLING OF OIL-AND-GAS COMPLEX  
SOLID WASTES**

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The interest in the problem of waste utilization lies in its huge quantity. More than 30% of solid waste, that is about 10 million ton, apply to oil-and-gas complex. And enterprises often have to collect and keep them on the territory and pay for its storage. Waste accumulation can cause intensive pollution of letosphere, hydrosphere and atmospheric air. Consequently, problems of waste negative influence on the environment are actual ones and need for undelayable decisions.

Let pay attention to exhausted silica gel – gas industry waste on the stage of gas dehydration. During production cycle specific capacity of adsorbent is reducing and contaminations are formed on the silica-gel surface. Annually about 250 tons of exhausted silica gel are formed in a compressor station.

It is preferable to use wastes as secondary raw material. The most acceptable way of exhausted silica-gel recycling can be its use in manufacture of building materials, for example, in gypsum-cemento- pozzolanic binders (GCPB).

GCPB represent the compositions, consisting of gypsum binders, portland cement and pozzolanic admixture. As active mineral admixtures tripoli powder, flasks, diatomite, some active ashes, etc are usu-

ally used. Characteristics of silica-gel correspond to properties of pozzolanic admixtures. So a new receipt of GCPG was developed, in this case silica-gel at the same time should be preliminary crushed. For recycling of one ton of exhausted silica-gel it is needed 3,200 tons of gypsum; 1,600 tons of cement and 0,176 tons of supersoftener. According to offered receipt of GCPG some samples of concrete were made. Tests of samples with application of silica-gel show high strength properties with factor of water resistance, which is 0,8 (without addition silica-gel it is 0.34).

For the substantiation of the ecological safety of exhausted silica-gel recycling products it was analyzed the water extract of the samples. pH of water extract goes into an acceptable interval from 6,5 up to 8,5, it is also not observed the migration of contaminant in water, that testifies the creation of a non-polluted product of recycling.

Thus, we offer new receipt of GCPG with the use exhausted silica-gel, which has sufficient water resistance that allows using concrete on its basis not only in dry, but also in damp conditions (in contrast to gypsum binders). Essential advantage of the offered receipt is fast growth of durability that allows releasing products from the form in 2 hours without application power thermal processing.

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