

High-melting point asphalt on the basis of high-paraffin oil tar

Kemalov R., Kemalov A., Maltseva A.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Objectives: A special place among oil bitumen is occupied by refractory bitumen - bitumen of solid marks or, as they are called, solid bitumen. **Methods:** They differ from the liquid bitumen with high softening point and some other physical and chemical properties, conditioned by the technological mode of production. Bitumen of solid brands find their application in various sectors of the economy both in pure form, as the basic raw material, or as a mixture with various organic products and minerals as part of the production of a number of technical materials. **Results:** The positive qualities of refractory bitumen and asphaltites, making them indispensable for heat and water proofing of underground channel-free heat conductors are: high softening point; thermo plasticity, which excludes the appearance of cracks; watertight; low water absorption (up to 30 times less than bitumen perlite). The possibility of obtaining high-melting grades of bitumen from high-paraffin tar in the presence of a catalytic complex by "conventional oxidation" that is the raw material purge air, and without purging air using potassium permanganate as a source of molecular oxygen. It is shown that in "conventional oxidation" (sparing of oxygen of air) in the presence of a catalyst complex it is possible to achieve a high softening temperature- over 1000°C - almost four times faster than using air purging without purging catalyst. **Applications:** Using the catalyst of atomic oxidation of petroleum residues showed that it took about 7 hours to reach the softening temperature of almost 1300°C.

<http://dx.doi.org/10.17485/ijst/2016/v9i43/104977>

Keywords

Catalytic complex, High-paraffin tar, Oxidation, Refractory bitumen