

The influence of waste chromia-alumina catalyst and burning temperature on physicomechanical properties of ceramics based on fusible clay

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Abstract

© The Authors, published by EDP Sciences, 2017. Effect of waste Cr/Al₂O₃ catalyst addition to fusible charge and firing temperature on the basic properties of the fired ceramics is studied. The dependence of strength, density and water absorption on firing temperature on 960, 1060 and 1160°C is established. It is proven that increasing firing temperature up to 1160°C provides less leachability of Cr(VI) from samples and increased environmental safety of ceramics.

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References

- [1] D. Vyshegorodskih, J. Ural market of metals, 8 (2005)
- [2] A. I. Khlystov, V. A. Bozhko, S.V. Sokolova, R.T. Riasov, Successes of modern science, 2 (2004)
- [3] H. Kinoshita, Advanced Radioactive Waste Conditioning Technologies, 1 (2011)
- [4] M. I. Safiullin, A.V. Wahine, S.N. Stepin, Bulletin of KSTU, 11 (2011)
- [5] Sh. Song, A. M. Garbers-Craig, Journal of the European Ceramic Society 36, 6 (2016)
- [6] M. Doynov, T. Dimitrov, S. Kozhukharov, Boletín de la Sociedad Española de Cerámica y Vidrio, 55, 2 (2016)
- [7] G.E. Bekmukhamedov, A.A. Lamberov, S.R. Egorova, B.M. Gabidullin, International Journal of Pharmacy & Technology, 8, 4 (2016)
- [8] A. V. Vahini, I. V. Usmanov, A. P. Svetlanov, S. N. Stepin, Paintwork materials and their application, 574, 10 (2008)
- [9] R. Galindo, C. Gargori, N. Fas, M. Llusar, G. Monrós, Ceramics International 41, 5 (2015)
- [10] Y. V. Tokarev, Abstracts of the 60th jubilee of the Republican scientific conference, 8 (2008)
- [11] N.R. Rakhimova, R.Z. Rakhimov, N.I. Naumkina, Y.N. Osin, Cement and Concrete Composites, 72 (2016)
- [12] Patent RF 2462431, Declared 24.01.11, Published 27.09.2012, Bulletin # 18
- [13] V.S. Izotov, R.Kh. Mukhametrakhimov, A.R. Galautdinov, Stroitel'nye Materialy 725, 20 (2015)
- [14] R.Kh. Mukhametrakhimov, V.S. Izotov, Stroitelnye materialy, 710, 116 (2014)
- [15] V.S. Izotov, R.Kh. Mukhametrakhimov, A.R. Galautdinov, Stroitel'nye Materialy 740, 70 (2016)