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It has been shown that the current operating conditions of Ukraine's coke chemical enterprises are characterised by significant difficulties in coal supply, caused both by the temporary loss of most of the coking coal production capacity and by logistical difficulties in supplying imported coal. Therefore, research conducted at one of the largest coke chemical enterprises in Ukraine on the coking of charges with the addition of coke fines, coal tar and accumulated coking coal enrichment waste is relevant. It has been established that coke of acceptable quality can be obtained by adding the following additives to the charge of the specified composition (%): G – 20; Z – 50; K – 30. Adding up to 4 % of enrichment waste to the charge practically does not change the strength indicators of the coke obtained, but increases its ash content by an average of 0.4 % for each percentage of the additive added. When adding up to 3 % of coal tar due to over-greasing of the charge, the M25 index decreases by an average of 0.8 %, and M10 increases by 0.3 %. When up to 3 % of coke fines are added to the charge, the M25 index decreases by an average of 2.5 %, and the M10 index increases by 1.8 % for each percentage of the additive added.

At the same time, it is important to grind the additive as finely as possible. When using a mixture of fines and resin in a 1:1 ratio in an amount of up to 3% of each additive, the M25 index decreases by an average of 1.7 %, and the M10 index increases by 1.2 % for each percentage of the additive. This reduction in negative impact is explained by a decrease in the discrepancy between the amount of low-mobility products formed during coking and the size of the surface they wet. The results obtained confirm the need to search for new ways to use the studied by-products in both traditional and fundamentally new areas of application.

Keywords: coke chemical production, coke fines, coal tar, coal enrichment waste, coal charge, coking, coke quality.

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