

ALIEN PROPERTY CUSTODIAN

PROCESS FOR THE PREPARATION OF ACTIVE SO-CALLED GAS-BLACK

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My invention relates to a process for the preparation of active so-called gas-black especially used for the reinforcement of rubber in the rubber tire industry and the like and is more particularly concerned with the preparation of active gas-black by incomplete combustion of hydrocarbons.

Now it has been found that by an incomplete combustion of hydrocarbons, particularly those with increased vapor tension, in a mixture with combustible or incombustible gases, the carbon black produced in the flames being deposited on cooled surfaces, for instance, discs, rings, rolls and so on, a considerable part of the produced gas-black of these gaseous mixtures which contain about 350 grs/cm and more of combustible hydrocarbon will not be deposited on the cooled surfaces but carried off with the hot waste gases. This gas-black carried away by the waste gases is of such a fine condition that it is extraordinarily difficult to precipitate the product from the gases. This leads to the provision of very expensive devices in the apparatus for the recovery of the aforementioned gas-black. In spite of such devices as, for instance, filter or the like, a considerable amount of the gas-black will not be deposited. These quantities will be carried off with the waste gases so that the yield of active gas-black decreases heavily. Furthermore, the gas-black which is carried off with the escaping waste gases will, contrary to the gas-black which is being made to deposit on cooled areas, not be cooled down quickly so that in consequence thereof its qualities differ in many respects from the gas-black deposited and cooled on the deposition areas. The qualities of the product depend, of course, on the ratio of the quantities between the deposited gas-black and that carried away with the waste gases as it is not possible to separate quantitatively the gas-black deposited on the cooled surfaces and the gas-black which was carried away and afterwards recollected.

The object of my invention is the nearly total

deposition of active gas-black made from gaseous mixtures with a high content of hydrocarbons on cold or cooled deposition areas. Now it was found that a considerably better yield of gas-black may be obtained even from incompletely burnt gaseous mixtures with high contents of hydrocarbons if care is taken to decrease the concentration of the gas-black in the flame towards the deposition area in such a way that a collision between the glowing particles of the gas-black is avoided. According to my invention this may be carried out in such a way that for the step of combustion of the gaseous mixtures highly loaded with hydrocarbons burners will be employed which possess a short and narrow slit and are equipped in such a way that the flame burns fan-like. It has been proved advantageous to perform a burner with a curved slit of a relatively short length as outlet. With a length of, for instance, 10 to 15 mm. and the shortest distance between the roll and the burner, a length of the flames of about 100 mm. is obtained.

By carrying out my invention and with the use of burners with narrow, short and concave, curved slits the flame will always burn steadily even with the highest loads. The burners remain clean. A reflection of gas-black particles from the roll and whirling away with the waste gases only takes place in the least negligible grade. The yield of the gas-black deposited on the roll increases considerably in such a way that often 20 to 30 percent more of the deposited gas-black may be produced than before. In consequence to the fact that practically all gas-black is deposited on the cooled surface the gas-black is uniform in its qualities. A further consequence of my invention is an almost complete reduction of the contamination of the air, owing to the fact that a whirling and carrying away of the gas-black in the waste gases over the roof is practically avoided.

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