

ACTIVATED CARBON.**Activated Carbon from Bagasse.**

ACTIVATED carbons apart from their use for gas absorption are also extensively used in diverse industries for decolourisation purposes. Although animal charcoal was being mostly used for these purposes only a few years ago, the vegetable activated carbons have now been successfully replacing the same in most cases. In spite of the poor regenerative capacities of most of the vegetable carbons they have been employed either on account of their better efficiency or for sentimental reasons.

Attempts are being made in several places in India to prepare activated carbons from different raw materials of Indian origin so as to supply the increasing needs of this commodity in different industries. Several methods have been tried before in this connection for making carbons from bagasse—a bye-product of the sugar industry—but mostly without any marked success. Utilising the same raw material, a highly activated form of carbon has now been obtained by the authors. This carbon has been found to be superior to all the imported carbons on the market, particularly so far as its use in the sugar and gur industries is concerned.

The carbon is made by treating bagasse with zinc chloride solutions of suitable strength and heating the mixture to suitable temperatures to obtain finally a highly gelatinous dark-looking mass. The mass after being heated nearly to dryness at the lowest possible temperature is put into a suitable ignition furnace and heated to a definite temperature. It must be remarked that the activity of the final carbon depends to a large extent on the carefulness with which the temperature is controlled at the optimum value. When the evolution of steam and other vapours have stopped issuing out completely and after maintaining the temperature of the furnace at the optimum value for about half to one hour, the mass is allowed to cool and, after crushing the same suitably, is treated with hydrochloric acid solutions. The carbon is filtered off from the solution and washed with water till the wash liquid is well free from acid. The carbon mass is dried suitably and is then ready for use.

Almost the whole of the zinc chloride used in the process is recovered and is used over and over again. Attempts are also being made to recover the hydrochloric acid in a suitable form to reduce the cost of manufacture still further.

Although zinc chloride has been used before for making several types of activated carbons in other countries, the processes have been kept absolutely secret and the details of the same are not available to the public. The authors have here worked out a method in detail for making a highly activated carbon from bagasse and utilising zinc chloride so as to be able to meet the demands of Indian consumers.

Further experiments are also in progress regarding the utilisation of many other raw materials as well as activating agents for making activated carbons still better and cheaper utilising the method described in this paper.

Preliminary calculations have shown that this carbon is cheaper than the imported ones.

Further details of the method and of the equipment necessary for a large-scale plant will be published elsewhere. An application for securing the patent rights for the above process and plant has already been submitted.

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