

IMPORTANCE OF DUST REMOVAL IN COTTON GINS

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It differs from other industrial dusts by its harsh properties, which make it difficult to dedust the dust released during the initial processing of seed cotton.

The main part of the dust coming out of cotton gins are waste mixtures, which are divided into organic and mineral types.

Organic dust mainly consists of crushed pieces of cotton stalks and cotton fibers of various lengths. Due to the stickiness of cotton fibers, dust sticks to mesh surfaces. Machine parts and air ducts are surrounded by small pieces of fiber and ensure the formation of dust. Dusty air begins to move due to the formation of small bumps on the walls.

Among waste compounds in cotton dust, the mineral type is more important. During the initial processing of cotton, their amount can be up to 80%, and it depends on the degree of contamination of the raw material, the type of cotton and its collection method. The percentage of mineral and organic substances in cotton dust depends on the stage of technological processes. At the beginning of the process, that is, in the pneumatic transport system of seeded cotton, the dust contained in seeded cotton may contain 10% to 20% organic and 80-90% mineral dust by mass. At the end of the technological process, for example, during fluff separation or pressing, organic substances in the dust make up 80-90%. Cotton dust contains a large amount of nitrogen, silicon II oxide (from 4.8 to 25.2%) in the mineral mixture.

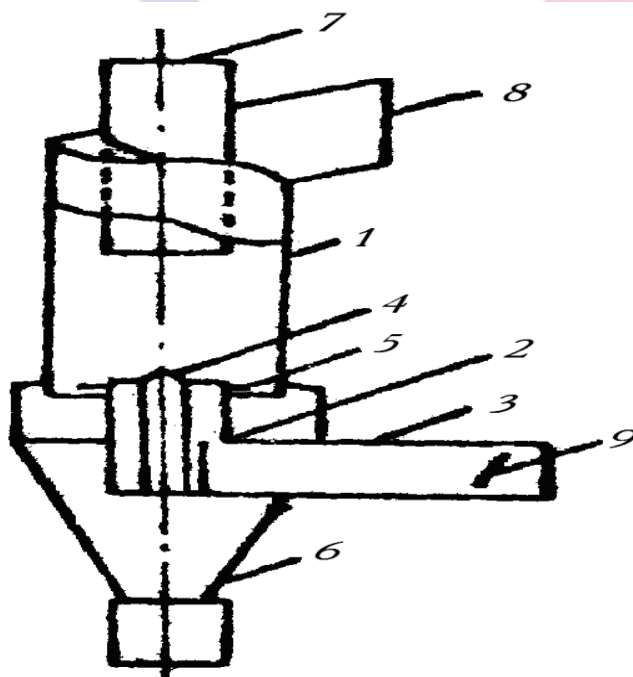
Medical biological properties of dust. There is information that sheds light on the medical-biological problems related to the determination of this cotton dust and its acute properties that have a negative effect on the human body. Unlike other textile dust, cotton dust can cause respiratory diseases called byssinosis (from the Greek word, bysos - cotton). The causes of this disease could not be determined for a long time, but several cases show that it is the chemical specificity of cotton dust, that is, its organic composition.

In order to clean the waste released into the atmosphere in cotton ginning enterprises, it is cleaned in dust settling chambers, single dust traps and two-stage dust traps, in addition, dust traps and dust chambers are widely used.

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Dust settling chambers are based on the laws of gravity, and in chambers designed to settle large dust particles, they are designed to capture slow-moving individual and fine fiber fractions.

Counter-current dust collectors: Counter-circulation equipment is a dry-type dust collector. The VZP dryer manufactured at the Moscow Textile Academy is successfully used in the chemical and other branches of industry. One of their main features compared to other dust collectors is their high efficiency. VZP-800 and VZP-1200 dust collectors consist of a cylindrical body, in the lower part of which there is a tangential pile 2, an inlet pipe 3, which works to transfer the primary flow of settled and dusty air. Cylindrical suction is placed on the border of the rotor, which belongs to the axis. It is connected with the upper part of the cone. On the outer surface of the rotor (returner) 5 is placed, its shape is truncated conical. The hopper part 6, the perforated dust holder is attached with a vacuum-valve flange. At the top of the dust holder, there is a pipe 7 for discharging the cleaned air. This pipe at the same time dusty air coming from the second flow of dusty air also performs the function of turning. A secondary dusty air distribution valve 9 is placed in the primary dusty air inlet pipe



Scheme of VZP switches

1-corps; 2-tangential groove; 3-lower inlet pipe; 4-suction pipe conductor; 5-return puck; 6 lower bunker; 7-purified air outlet pipe; 8-upper inlet pipe; 9-valve.

VZP pulverizers work as follows: Two unidirectional streams of dusty air enter a mixer or separation zone located at the top of the suction tube and primary filter. Particles caught under the centrifugal force are separated (separated) on the wall and fall down the hopper with a downward flow. It is continuously removed from there through a vacuum valve. As the

downstream secondary flow spirals down the wall of the equipment, the return washer pulls it back up and joins the primary flow. Along with it, it leaves the suction pipe.

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