

The invention relates to the processes of separation in chemical industry, namely to equipment of one of the basic processes of the technology of producing highly dispersed pyrogenic oxides of metals, mainly silicon dioxide. A pneumatic separator is made in the form of a vertical cylindrical column with extended upper part equipped with inlet and outlet pipes, a swirler for pneumatically dispersed flow, which is introduced into the apparatus, and a delimiting device for separation of the area of separated particles from the area of swirled flow of apparatus. In the case the swirler of flow is made in the form of a concentric insert open from the ends, into which along the tangent not less than two inlet pipes for pneumatically dispersed mixture to be classified are introduced, which are located in one horizontal plane and equidistantly from each other, moreover the lower end of the insert is fixed end-to-end to a cone, which is attached from below to the cylindrical column, and the ratio of the diameter of insert to the diameter of column in the area of the installation of this insert is selected within the limits from 0.5-0.7 to 1. These and other parameters of the separator and its design features are selected in such a way as to ensure the efficient separation of polyfractional mixtures. The disclosed design of pneumatic separator with insignificant capital expenditures for its manufacture provides for division of the mixture with particle sizes of 1-50 μm , for example, pyrogenic silicon dioxide, into three fractions, one of which, the largest, is represented by mechanical impurities.