Finally, DE 10 2008 049 734 A1 discloses a process and an apparatus for batchwise chlorine dioxide production, in which the apparatus is arranged under water. A disadvantage of batch operation is the necessary control of reaction and flushing operation.

In view of this prior art, it is the object of the present invention to further develop an apparatus of the generic type mentioned at the outset so that it is simple and has a robust design and enables differing chlorine dioxide syntheses based on two reaction components to be carried out without danger.

This object is achieved as the mixing tube is provided with an ancillary entry opening for the entry of ancillary water to be enriched with chlorine dioxide and free of reaction components.

The invention therefore relates to an apparatus for feeding chlorine dioxide to water, comprising a first feed pipe for feeding in a first reaction component, comprising a second feed pipe for feeding in a second reaction component, comprising a mixing tube for mixing and reacting the two reaction components to chlorine dioxide, at one end of which the two feed pipes join and at the other end of which is arranged a suction chamber into which feed water to be enriched with chlorine dioxide can be sprayed by means of a nozzle, and comprising an exit water pipe leading downstream from the suction chamber,
in which the mixing tube has at least one ancillary entry opening for the entry of ancillary water to be enriched with chlorine dioxide and free of reaction components into the mixing tube.

The basic concept of the present invention is to carry out the reaction of the components within the protective mixing tube to give chlorine dioxide in comparatively high concentrations and, after the end of the reaction, to dilute the resulting chlorine dioxide abruptly with ancillary water before entry into the suction chamber, so that

Claims:

1. An apparatus for feeding chlorine dioxide to water, comprising a first feed pipe for feeding in a first reaction component, comprising a second feed pipe for feeding in a second reaction component, comprising a mixing tube for mixing and reacting the two reaction components to chlorine dioxide, at one end of which the two feed pipes join and at the other end of which is arranged a suction chamber into which feed water to be enriched with chlorine dioxide can be sprayed by means of a nozzle, and comprising an exit water pipe leading downstream from the suction chamber,
   characterized in that the mixing tube has at least one ancillary entry opening for the entry of ancillary water to be enriched with chlorine dioxide and free of reaction components into the mixing tube.

2. An apparatus according to claim 1,
   characterized in that the ancillary entry opening is located downstream of both joining points of the feed pipes to the mixing tube.

3. An apparatus according to claim 1 or 2, characterized in that nozzle and exit water pipe are arranged coaxially with one another in the region of the suction chamber.

4. An apparatus according to claim 3, characterized in that the mixing tube extends radially relative to the nozzle and exit water pipe, at least in the region of the suction chamber.

5. An apparatus according to claim 4, characterized by a base plate which closes that end of the mixing tube facing away from the suction chamber and through which both feed pipes pass, and by a clamping set which exerts an axial force on the mixing tube between base plate and suction chamber.

6. An apparatus according to claim 3, characterized in that the mixing tube extends coaxially with nozzle and exit water pipe, at least in the region of the suction chamber.

7. An apparatus according to any one of claims 1 to 6, characterized in that the slenderness ratio of the mixing tube, measured from the joining point located furthest downstream to the ancillary entry opening located closest upstream, is between five and eight.