

THE USE OF SUPERHEATED WASH WATER IN THE WASHING OF SUGARS

One of the primary objects in the use of superheated wash water is to obtain a high degree of atomization which in turn promotes more uniform washing of sugar.

It is obvious that the same quantity of superheated water would dissolve more sugar than water of lower temperatures. It is a fact, however, backed by a large number of installations using superheated wash water that the centrifugal sugar yield is increased. This is explained by the fact that the quantity of wash water required to produce quality sugar is materially reduced over that required when using water at lower temperatures.

We recommend, in conjunction with wash water of 220-230° F., a nozzle pressure of 50 p.s.i. The combination of high pressure and high water temperature produces a fine hot mist that uniformly blankets the sugar wall in the centrifugal basket.

Inadequate or unequal distribution of the wash water results in overwashing to produce quality sugar with consequent excessive sugar dissolution and water usage.

The more uniform the distribution of the wash water the better the job, and superheated wash water at high pressure does just that.

The rate of wash water application is directly proportional to the speed at which the water can filter through the sugar wall. A slow filtration rate would require a correspondingly slow rate of application, otherwise there would be a build-up of water on the surface of the sugar wall. An accumulation such as this would dissolve an excessive amount of sugar. The combination of centrifugal speed and water atomization results in considerable cooling of the hot mist before it strikes the sugar wall, such that the dissolution of sugar is minimized. At a constant pressure the rate of application is varied by changing the size of the nozzle orifices.

The use of superheated wash water or hot mist washing also promotes greater centrifugal capacity by reduction in the washing and drying periods in the centrifugal cycle. Also there is a reduction in the moisture content of the sugar discharged from the centrifugal.

Since sugar washed by superheated wash water is quite hot and dry when discharged from the centrifugal, the drying operations are simplified and less heat required for drying. The result is cooler sugar from the dryer.

It is now our standard practice to recommend superheated wash water where sugars are washed to high purity and in conjunction with interval or double washing. Many factories are now using this combination.

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