



SMRI Filterkwik



SMRI FilterKwik is a new filterability apparatus and method for raw sugars that has been developed by the SMRI. Filterability is a measure of how well a sugar solution will filter. A high filterability means that the sugar liquor will filter rapidly during refining. Filterability of raw sugar has become an important quality parameter particularly for the export market since it directly affects throughput in a refinery. The test and the apparatus was developed for sugar mills to enable them to conduct their own filterability tests so that they can have better control of their raw sugar filterability.

The method is based on a relationship between the filtrate volume/mass and the filtration time and uses the following conditions:

- 600 grams of a sugar solution at a specified Brix.
- Filtration through a specific membrane as per the SMRI protocol.
- A constant differential pressure which is automatically regulated.

Advantages of the SMRI Method

- It is simple - operation is easy and well automated.
- It has good **reproducibility and repeatability**.
- Filtration is done at refinery operating **temperature**, making it more meaningful.
- This temperature **prevents** bacterial **contamination**, which would interfere with the result.
- Samples are filtered at their **natural pH**, avoiding the need for expensive buffers. This also avoids potential interference from certain ash ions.
- The method holds **true** for **all kinds of sugars**, from very good to very poor.
- The data is **logged by computer**. Therefore, a permanent record of each sample's data can be kept for reference purposes.
- The result is **more meaningful** than the old method; other useful parameters which further characterise the filtration behaviour of the sugar can be derived from it. These include:
 - the Plugging Constant (PC)
 - the Pore Resistance Constant (PRC)

Benefits of the SMRI Filterkwik System?

The SMRI FilterKwik system allows for additional investigation into the causes of, and contributing factors to, poor filtering sugars through analysis of the residue left on the membrane after filtration. Residues can be analysed for inorganic and organic content to help identify the causes of poor filtration.

The rapidity of the method and the availability of the membrane for examination after filtration (not possible with a method that uses filter aid) means that a raw sugar factory can rapidly assess production sugar for quality. Thus, remedial action can be taken should problems be identified, reducing the risk of raw sugar being rejected by customers.

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