Summery 31-dec2008

The PI Quick Scan was performed on 07-May 2008 by Bart Drinkenburg and H.N. Akse. Further participants were Frank van der Pas, Senter Novem, Ger Verkoijen, Kemira and Markus Oster, Kemira. After a short Kemira presentation and introduction to the business and the technical processes the discussion started with the subject energy efficiency. Possibilities to combine energy demands and releases between different production lines have been raised up in general but heat exchanger have already been installed since years and efficiency is measured and monitored. Looking at really huge improvements we focused on the two subjects:

- Waste gas treatment after the 2 cyclones in DP3
- Crystallization possibilities from oversaturated solutions to adjust the particle size distribution.

Waste gas treatment after the 2 cyclones in DP3

Based on the production capacity of 4000 Kg/h and a waste gas flow of 100.000 m3/h containing up to 120 Kg/h solid and traces of Propionic acid Kemira mentioned the loss of 120 Kg/h, the high energy demand in the 2 traps of the gas cleaning station (about 700 KW) and the low performance regarding Propionic acid removal (near zero) We presented the particle size distribution after the spray drier and we noticed that the cyclones are working proper and the loss of 120 Kg/h is caused by really fine particles. The experts gave proposals for different separation methods. Such an installation can increase the capacity and may give us the option to improve the gas cleaning station regarding the energy demand. Currently we follow up both ways. We are looking for a filter system after the cyclones and we strive for a low energy fan in the 2nd trap of the gas cleaning station. Here we expect a saving on energy of about 350 KW.

Crystallization possibilities from oversaturated solutions to adjust the particle size distribution.

We explained our current crystallization process with a cooling down program and limited stirring due to old installations. Beside crystal growing on the walls we are not in position to get a desired particle size distribution. Particles were always too large. Years ago test have been performed with seeds and max. stirring but the success was low. The experts showed different methods (external heat exchanger, how to use seeds, external crystal breaker, e.g. a rotary pump) how to adjust the particle size distribution. Based on that discussion we built up a pilot plant to improve our crystallization processes. With the start-up in Dec 2008 we performed 2 tests which gave a very narrow particle size distribution with much smaller particles than we ever had. This looks very promising. Further tests will follow soon.

As mentioned above, the PI-quick scan gave us interesting suggestions and we are following up the discussed subjects. For us it was really worthwhile to do the Quick Scan.

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