

Public summary ("openbare samenvatting") PI Quick Scan AkzoNobel MCA Delfzijl

A process intensification quick scan (PI quick scan) was carried out at AkzoNobel Industrial Chemicals MCA plant in Delfzijl. AkzoNobel Industrial Chemicals has a leading position in Europe for chemical transformation salt, chlorine and caustic lye for industrial applications and a worldwide number one position in monochloroacetic acid (MCA).

The scope of the PI quick scan concentrated on the main process sections of the MCA plant in Delfzijl aiming at the identification of:

- short term empirical improvements applying currently available PI equipment and
- medium/long term fundamental breakthroughs regarding PI technologies that would enable a dramatic improvement of the process.

The MCA process was analyzed on unit operation level and the present operation including current and future issues and bottlenecks were discussed. The PI team found that AkzoNobel has a high level of knowledge concerning the fundamentals of MCA production resulting in a mature and well managed process including already many examples of best practices. It was also acknowledged that AkzoNobel has found the delicate balance between required process conditions and the severe demand the chemical system puts on the materials used in the various pieces of equipment.

Nevertheless, the discussions revealed that there may be scope for a step up in performance using PI and the overall potential of AkzoNobel's MCA process for PI was judged as medium for as well the short/medium term as for the long term.

An even more accurate judgement with respect to the potential of process intensification options requires the continuation of the efforts aiming to elucidate some specific details with respect to the kinetics of the complex set of reactions involved in the formation of MCA.

The discussions with the PI quick scan team provided next to the acknowledgement that the current innovation portfolio contains appropriate projects to realize promising PI steps in the future also some new suggestions that will be evaluated in the yearly review of potential development projects.