

Coating fine particles

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Abstract:

YKI, Institute for Surface Chemistry (now incorporated into SP) hosted an institute excellence center called CODIRECT aiming for controlled deliver and release of active ingredients. The carrier particles for the active were mainly porous silica particles. We found that crucial for the release profile of the active in sink conditions was to add a particle coating. Particles coatings are easy to make for large enough particles using spray coating but below say 50 μm the coating procedure must be made in solution. It is more complicated in solution to strike a balance between the following factors: containing the active in the particle, obtaining an effective coating and avoiding various flocculation phenomena. In this particular project we used porous silica particles from PQ Corporation as the carrier, the active was o-vanillin and the particle coating was either polyethylene imine alone or in combination with silica precipitated from TEOS. The release profile of these different coatings will be shown and the possibility to do the coating procedure in more concentrated dispersions outlined. Depending on coating procedure the complete release of the active varies from minutes to days.