

Retention of fillers by papermaking fibers

Institute of Paper Chemistry - Retention Aid



Description: -

-Retention of fillers by papermaking fibers

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Notes: Supplement to work of the same title by Lillian Roth, Glen

SAeger and Jack Weiner (2nd ed., 1959).

This edition was published in 1965



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[PDF] MODIFICATION OF PAPERMAKING GRADE FILLERS: A BRIEF REVIEW

While manufacturing paper, at the wet end of paper mill retention and drainage chemicals , are used to optimize fiber retention and water drainage.

Substituting pulp for filler is increasingly attractive for papermakers

Some grades of paper, such as tissue and milk carton board, often contain little or no filler. Retention of fillers and fines can result from deposition on fibers, either freely suspended in the papermaking suspension or immobilized in the forming sheet, or by capturing fines and filler aggregates in the sheet by mechanical entrapment.

The Papermaking Bible

Filler flocculation could occur as well, but it is slower than filler deposition on fibres van de Ven, 1993 and thus it is expected to play a minor role. However, talc is also widely used as a filler, especially in Finland, Japan, China, and France, where high-quality deposits are located Biza 1999. Talc, which is well known for its oil-loving and pitch-loving surface, has a reported surface free-energy of 31.

Paper chemicals

The limitation of cationic starch is its dependence on charge balance. After these changes there were still some bulk loss remaining.

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Other dissolution-inhibiting additives include magnesium ions, 1,2-dicarboxylic acids, oxalate, and orthophosphate Pang et al. This balance results in a need for fiber flocculation to be limited but the flocculation of fine particles and retention additives should be maximized.

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For purposes of paper filling, it can be argued, based on theory, that it might be best if all of the particles were approximately equal in size. In other studies the optimum particle size for light scattering efficiency has been found to be a function of particle shape Gill and Scott 1987.

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However, as indicated by the entries in the second column of the table, suppliers and users of papermaking fillers have developed various ways to minimize various undesired effects.

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