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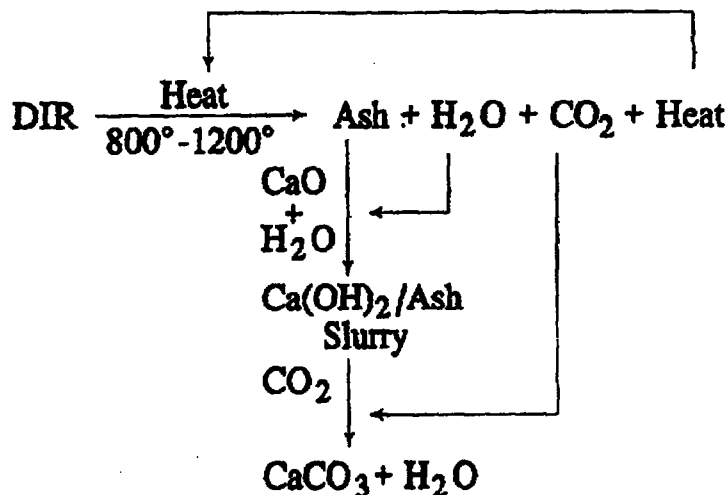
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(54) Title: RECYCLING OF MINERAL FILLERS FROM THE RESIDUE OF A PAPER DEINKING PLANT



(57) Abstract

A method of recycling mineral pigments contained in the waste produced from the deinking of wastepaper. The deink residue is heated in an oxygen-containing atmosphere to a temperature sufficient to completely oxidize all the organic hydrocarbons present. Heat, water, and carbon dioxide also are generated and may be captured and reused in the process. Combustion causes a chemical reaction to occur, so that the original pigments contained in the deink residue are converted to new, stable mineral forms. The ash from the combustion is primarily a mixture of gehlenite (Ca₂Al₂SiO₇), anorthite (CaAl₂Si₂O₈) and perovskite (CaTiO₃). The ash containing the mixed mineral phases is added to a reactor in which carbon dioxide gas is bubbled through an aqueous slurry of calcium hydroxide so that precipitated calcium carbonate (PCC) is produced. Because the mineral phases in the ash contain calcium as part of their crystal structure, the PCC will precipitate and grow on the ash particles. This results in a "recycled" PCC pigment containing an ash "core". The properties of the recycled PCC are similar to virgin PCC.