新的溴化學技術在揮發性脂肪酸(VFA)、過氧化氫酶(Catalase)控制及微生物菌泥(Biofilm) 的去除

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New Bromine Chemistry For Effective VFA Control, Catalase Control and Biofilm Elimination

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Summary

Oxidizing biocides (oxidizers) are commonly used to control the microbial population in papermaking systems with the aim of reducing slime deposit. Paper making furnish contains fiber and additives that react and consume oxidizers. This system demands overdose of traditional oxidizer to achieve the free residuals to kill Bacteria, but excess oxidizer causes reaction with additives and increases corrosion rate. A new biocide which is a blending of ammonium bromide solution with hypochlorite and mill freshwater that effectively controls microbial populations without adversely affecting the papermaking process is now available. The product provides excellent control of microbial populations and quickly degrades into inert compounds before effluent discharge. The new biocide, based on bromine chemistry, has bromide activated chloramine for microbial control. Being selective to attack the S=S bond, this biocide has many advantages over the oxidisers and other proprietary biocides.

一、緒言

氧化型殺菌劑在抄紙機系統中用來控制微生物菌落及菌泥的應用相當普遍，漿料系統中含有纖維及造紙添加劑很容易和氧化物起反應，這樣的系統需要過量的傳統氧化劑以便有自由的游離殘餘氧化物以達到殺菌的效果，然而過量的氧化劑容易和濕端其他添加劑反應並且腐蝕設備，另外傳統的有機殺菌劑則是有在系統中無法測出其添加濃度的缺點。

有一種全新的殺菌劑可以有效的控制菌落且又不會對抄紙機系統有負面影響，這個產品可以有效的殺菌而且在放流水前可以快速的降解成無害的成分。這種新型殺菌劑是以溴化學反應爲基礎，產生活性溴化氯胺(Bromide Activated chloramine) 來進行殺菌的效果，它具有反應選擇性只會和 S=S 鍵反應，這種殺菌劑比起一般氧化劑及傳統殺菌劑有更多優點。