CHAPTER 1

Nucleation and Crystal Growth in Continuous Crystallization[†]

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1.1 Introduction

Continuous crystallization has been a common process in the fine chemicals and petrochemical industries for decades. The advantage of continuous crystallization led other industries to employ the technology on the manufacturing scale. Continuous crystallization processes need smaller process equipment leading to substantial reduction in capital and operating costs. While batch processes can demonstrate significant batch-to-batch variability in product quality, continuous crystallization processes tend to give the continuously created crystals the same process experience, irrespective of their time in production, and therefore are potentially more consistent. Additionally, using a recycle, it is feasible to achieve higher yields in continuous processes. Continuous crystallization also tends to yield lower impurity inclusion in the products due to lower accumulation of impurity in the mother liquor by continuous fresh feed addition.

[†]Electronic supplementary information (ESI) available. Colour version of Figure. 1.1. See DOI: 10.1039/9781788013581

The Handbook of Continuous Crystallization
Edited by Nima Yazdanpanah and Zoltan K. Nagy

Published by the Royal Society of Chemistry, www.rsc.org