ABSTRACT

Mass Transfer From Single Drop
Part (1) Design and Hydrodynamics

Key words: liquid - liquid extraction, Spray column drop size, drop velocity,
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Abstract

Design of solvent extraction columns and study of the hydrodynamic of single liquid
drops has been undertaken in spray columns. Experiments were performed using different
binary chemical systems and a glass column. This first part is concerns with the
hydrodynamics of single drops where the systems Benzene / water, Toluene / water and
Kerosene / water are used. The relationship between the drop size \( d \) and terminal
velocity \( V_t \) was examined and a new model is suggested. Such information is required
in estimating drop size distributions which are usually expected to change along the
column. Experimental results indicate a decrease in \( V_t \) on increasing the down flow. It is
concluded that down flow of the continuous phase has a pronounce effect on the drop
terminal velocity and drop formation time inside the column.