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Measurement of Interfacial Areas in Packed Towers by Gas Absorption with Chemical Reaction

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Abstract: *This paper is concerned with mass transfer studies. In connection with a study of the distribution of surface ages of the liquid in a packed column and which was previously reported, it was necessary to determine the interfacial are under the various conditions employed. Accurate knowledge of the interfacial area for mass transfer packed towers has long been lacking. This difficulty in estimating the area of contact between gas and liquid flowing a packed column necessitates the use, in practice, of the product, k_La of the transfer coefficient k_L and a, the effect area per unit volume of packing. Three kinds of area have been distinguished in a packed tower: the geometric total area (if the packing, the 'wetted' areas (described as the fraction of the packing surface wetted by the liquid), and the 'effective area.' The effective area is probably equivalent to those regions moving liquid which are most effective for mass transfer.*

Keywords: *Packed towers, gas absorption, chemical reaction, measurement*